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The Hidden Listeners: Regulating the Line from Telephone Operators to Content Moderators

ELINOR CARMI
Liverpool University, UK

This article examines hidden workers in media technologies and how media companies use them to engineer sociality. It focuses on two types of workers: telephone operators in the early 20th century and contemporary content moderators in social media. This article proposes *processed listening* as a concept that is better suited to examine their work, especially attending to multiplicities of actors, spaces, and temporalities. Drawing on science and technology studies and sound studies, I examine how processed listening involves the way hidden media workers tune in and out of multilayered mediated spaces to monitor, detect, measure, categorize, and filter unwanted people and behaviors. In doing so, they embody both the communication channel and the filter. They create a feeling of immediacy that is sold as "real-time" experience, while shaping what is sociality. In this way, media companies can avoid being accountable for the decision-making processes involved in the operation of their services.

Keywords: processed listening, sound, real time, telephone operators, content moderators, Facebook

This article focuses on hidden media workers and the way they deploy listening to maintain and shape the media they operate. It makes a link between two types of media workers: switchboard telephone operators and commercial content moderators (CCMs). The telephone operators mainly worked around the first half of the 20th century, and CCMs have started to work for social media platforms from around the mid-2000s. One of the main similarities between these media workers is their need to make transitions between different channels of the media they operate. Whereas telephone operators tuned in and out of subscribers' lines as well as the overall telephone infrastructure, CCMs tune in and out of users, discussions, pages, groups, and so on. By conducting listening, these workers process different types of knowledge (sounds, images, behaviors, irregularities) and follow specific procedures such as filtering to make sure the system feels as if in "real time." Doing so, they reproduce the way content, people, and their relations are mediated: They orchestrate sociality.

Elinor Carmi: Elinor.Carmi@liverpool.ac.uk
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The work of the telephone operators and CCMs is hidden because they are part of the communication channel. They are meant to create a feeling of immediacy of the communication while concealing the processing procedures. What kind of processes do they conduct? What kind of tempospatiality does their work entail? Why does their work remain hidden? This article examines hidden media workers' processing procedures and reveals the politics behind them; it highlights why we should care. But rather than conceptualizing the politics and power involved in their work through visual approaches, I argue that listening is a more productive concept when examining multilayered media.

There is an overwhelming focus in the media and communication field on vision, invisibility, and seeing as ways to theorize and conceptualize power and ways of knowing, especially when it comes to new media. Scholars from different fields (Bucher, 2012; Campbell & Carlson, 2002; Chun, 2006) use Michel Foucault's (1977) thought experiment, taken from Jeremy Bentham's prison design—the Panopticon— as a metaphor to explain the Internet's surveillance architecture. These scholars use optic metaphors that rely on modes of (in)visibility as ways of knowing (and controlling) objects and people through architecture, which produce power relations.

Taina Bucher (2012), for example, argues that "Foucault's idea of an architecturally constructed regime of visibility as exemplified in the figure of the Panopticon makes for a useful analytical and conceptual framework for understanding the ways in which the sensible is governed in social networking sites" (p. 1165). Bucher examines how visibility is constructed by software design, and argues that algorithmic architecture enacts specific sociality. Focusing on Facebook, she argues that people are afraid of becoming invisible by algorithmic procedure and hence change their behavior to become visible through the architecture that the platform constructs.

The problem with such an approach is that media architectures involve multiplicities of actors (users, workers, and nonhumans), infrastructures, channels, and temporalities that vision cannot capture. It is impossible to see through the multiple networks, people, and bots that are involved in multilayered mediated spaces such as the Internet and social media. These multilayered mediated spaces consist of the interface that the "ordinary" users engage with, usually called the "front end," and multiple layers that are being entangled behind at the "back end." So, although these accounts provide important insights, they are also limited. Sound, on the other hand, has the ability to cross spatial boundaries and fill spaces with its presence, which makes it more suitable for examining multilayered mediated architectures. Specifically, using listening as a conceptual tool allows us to examine power relations that are operated and enacted in media architectures, and accommodate for multiplicities of actors, temporalities, and spaces.

Thinking differently about power in media, this article focuses on the way media workers deploy a mode of listening that I call *processed listening*. Using this concept, I examine how and why hidden media workers operate as part of the hidden infrastructure of media. Telephone operators and CCMs are humans who are trained to work like machines; they have to move in a fast, repetitive rhythm and enable the frictionless experience of the media they facilitate. The work of such workers highlights the tensions and politics behind automation, whereby humans are trained to become more like machines and machines are trained to become more like humans. It raises questions about whether machines should do work that involves decision-making processes, which influence people's subjectivities, behaviors, interactions with

others, and understanding of their everyday life (news, culture, and politics, etc.). Importantly, it points to the power media companies have and their position in destabilizing important aspects of society.

In the following sections, I show how listening is a productive concept to examine power relations within media by focusing on two types of workers from two different time periods: Bell Telephone Company's switchboard telephone operators and Facebook's CCMs. It is important to show a longer history of these media practices and amplify the similarities and differences between them. In the next section, I introduce the new theoretical concept of processed listening. Drawing from science and technology studies and sound studies, I argue that this new mode of listening is more attuned to media workers and the knowledge production practices they deploy. Processed listening is particularly useful for workers who operate in multilayered media architectures such as the Internet or social media. In the following section, I outline the method I used for this research. Then, the next section examines the work of Bell Telephone Company's switchboard telephone operators. In this section, I show the way the telephone operators were trained to behave like automatic machines and the procedures of their work as part of the communication channel.

In the following section, jumping almost a century later, I focus on Facebook's content moderators and their work process. Here, I examine CCMs and the hidden and silent procedures they conduct to create the feeling that only algorithms are at work, while emphasizing the immediate experience of software-mediated architectures. Finally, I conclude by emphasizing the importance of drawing a link between these two types of workers and the usefulness of processed listening to future Internet research. I show how these workers have to make decisions about different types of behaviors, malfunctions, and information within seconds, and do this by being simultaneously the communication channels and the filters.

Listening to the Sound of Media

Media and communications scholars and the subfields such as film, television, new media, and software studies have primarily used concepts of vision to examine power in media. Although there is a body of work on audiocentric technology research (Crawford, 2009; Lacey, 2011; Scott, 2009; Sterne, 2003), new media and science and technology studies research remain dominated by optic-centric approaches. For example, Chun (2011) argues that by examining

> software and the visual knowledge it perpetuates, we can move beyond the so-called crisis in indexicality toward understanding the new ways in which visual knowledge—seeing/visible reading as knowing—is being transformed and perpetuated, not simply rendered obsolete or displaced. (p. 107)

The ability to see or be visible, according to Chun, enables people to know things and reveal the power dynamics of software-mediated spaces. But how can things, people, or their behaviors be seen or known if they operate simultaneously in different times and spaces? This is where listening can be more productive.

The practice of listening is about making decisions about what to focus on, to tune into a stream of sounds and make a distinction and separation between specific elements. Listening can redraw boundaries of space, challenging categories of private and public. As Tom Rice (2015) argues, listening

gives the ability to tune in and out of spaces in a selective way; it "is understood to involve a deliberate channelling of attention toward a sound. . . . The term encompasses a wide variety of modes, qualities, or types of auditory attention" (p. 99). When it comes to the types of listening, philosophers and culture critics (Adorno, 1982; Attali, 1985; Douglas, 1999) have paid attention to the politics and power relations listening entails in terms of taste, values, and subjectivity.

Listening as a knowledge production practice has mainly been explored by history of science and science and technology scholars, who focus on the way different practitioners produce knowledge by deploying different modes of listening. These practitioners can be car mechanics who use particular instruments to listen to an automobile's engine to detect a problem (Bijsterveld & Krebs, 2013; Krebs, 2012), psychoacousticians who examine auditory perception (Bregman, 1994; Moore, 2003; Williams, 1994), and doctors who use a stethoscope to listen to patients' bodies to determine their health status (Rice, 2010, 2013). Few researchers have examined the sonic knowledge production of media practitioners whose work is usually hidden and/or unknown to the wider public, because it is conducted in the back end of the media system.

Outlining a taxonomy of practitioners' modes of listening, Alexandra Supper and Karin Bijsterveld (2015) propose two dimensions: the purposes (why) and the ways (how) that are conducted by practitioners from various fields to produce knowledge. Each of these dimensions has three taxonomies: In terms of the purpose of listening (the why), they identify existing modes of listening, specifically *monitory*, which is meant to check that everything is operating in a good condition; *diagnostic*, which is meant to pinpoint the specific reason or source of the problem; and *exploratory*, which tries to find new phenomena. In terms of the ways of listening (the how), Bijsterveld and Supper identify existing modes of listening: *analytic*, which focuses on individual components of a (sound) stream; and *synthetic*, which fuses selected elements into a single amalgamation. They add a new mode of listening that they call *interactive*: the ability to focus on different sound sources and switch between different elements to create a new one (i.e., DJs, for example).

However, as I mention elsewhere (Carmi, under review), these modes of listening cannot capture or describe what is happening in knowledge production conducted in media and the workers who facilitate it. When it comes to media, there are multiple workers who listen to multiple spaces through multilayered spaces simultaneously. These multiplicities are missing from Supper and Bijsterveld's listening taxonomy.

Moreover, listening through media is a continuous process rather than a singular event that occurs in a particular time and space. These notions of continuous processes and becoming rather than fixity and essence come from feminist technoscience approaches of the body and process (Barad, 2003; Braidotti, 2002; Haraway, 1988). As Karen Barad (2003) argues about processes of knowledge production, "*Boundaries do not sit still*. . . . Temporality and spatiality emerge in this processual historicity. Relations of exteriority, connectivity, and exclusion are reconfigured" (pp. 817–818). These kinds of tempospatial reconfigurations and redrawing of boundaries through listening are the focus of this article. Following these gaps, I synthesize feminist technoscience and sound studies to create a new mode of listening I call *processed listening*. What I mainly take from their approaches is the fluidity of the body and lack of distinction between human and nonhuman, as well as the notion of ongoing processes rather than fixity of one event.

In computation, *to process* means to deploy a procedure, or several, on data according to specific protocols that can include (re)organization, removal, deletion, filtering, and adaptation. This term has inspired processed listening, which attends to the context of media knowledge production and includes monitoring, measuring, detecting, categorizing, and filtering. This mode of listening describes the way media workers selectively tune into different sources through the media apparatus, by using several tools (which can be automatic or manual), in different temporalities, to produce different kinds of knowledge for various purposes (mostly economic and political).

Although decades separate telephone operators and CCMs, this article aims to make a link between them, and show how they deploy similar modes of listening to regulate, manage, and control what, when, and how people and things are mediated. Processed listening enables these hidden workers to produce the efficient functioning of the communication channel, which they are part of. But efficiency is defined differently by different media companies that have economic and political intentions in the way they design their services. By examining hidden media workers, this article makes several contributions: first, showing the links and similarities between past and current media practitioners and pointing to what we can learn from them; second, making the argument that listening rather than seeing/vision can be more productive when examining power relation through and in media; third, showing how media workers are both facilitating communication channels and are part of them at the same time; and finally, fourth, showing the politics behind automation and selling an immediate, "real-time" experience with media. In the next section, I elaborate on the method I used for this article.

Tuning Into the 'Back-End'

To examine the hidden listeners in media technologies, in this research, I undertook several qualitative methods. To examine the telephone operators, I analyzed Bell Telephone Company's archive by focusing on its *Telephone Quarterly* journal (which changed to *Bell Telephone Magazine* in 1941). The 27 articles that were selected and analyzed from Bell's journals included specific articles focused on transmission of information, the role of the people who worked for Bell, and the illustration (graphic) tools that were used to explain such theories. After the data collection, I analyzed the articles using critical discourse analysis (Wodak & Meyer, 2009), finding reoccurring themes and power structures that emerged from the text and images.

Analyzing CCMs on Facebook was challenging. Because there is limited access to Facebook's algorithms or internal documents that can provide information about the rationale of its operation and its workers, researchers need to use methods that manage to capture as much data as possible. To understand how processed listening is conducted on Facebook, I used three qualitative methods, which gave richer and more diverse data. First, I catalogued different "terms of use" sections for one year from November 2013 to November 2014, opening each section of answers to questions and saving the whole webpage as a PDF. I analyzed these using discourse analysis to understand what kinds of statement Facebook makes, and how various definitions and explanations change over time. Second, I followed several pages that Facebook uses to announce news about its platform and to share different statements about its current and new features. These pages include Facebook's News Room and Security sections, which announce new features or other news that can provide information on the company's conduct.

Third, I analyzed specialist technology websites that provided an in-depth understanding about Facebook's conduct that the company does not reveal through its channels. This is important as the amount of information that Facebook publishes about its new features (such as algorithms or moderation guidelines) or workers (such as CCMs) is very limited and controlled. For this reason, technology-focused websites can bring other insights by analyzing different things or interviewing the company's workers. I analyzed the following websites: Wired, The Verge, Newsweek, and TechCrunch. These texts enabled a more critical approach to the kind of statements that Facebook does not publish because it wants them to remain concealed, specifically, the stories of CCMs. The next section focuses on Bell Telephone Company's switchboard telephone operators and how they were trained to deploy processed listening.

The Telephone Operators Crossing the Line

In the early 20th century, switchboard telephone operators connected between subscribers in a manual way to establish a communication line. These positions were held by young and attractive women who were employed because they were cheap labor. They were believed to be more docile than the young boys who were employed for the job in the first decade of the telephone switchboard. But more than that, the telephone operators embodied the telephone and helped branding it as a desirable object. Telephone operators, as Michèle Martin (1991) argues, held a problematic position because they were both an important element of the telephone but, at the same time, a disruption to the production of immediate communication between subscribers. So, although people enjoyed being "served" and getting an answer to many desires, some subscribers also feared that the telephone operators eavesdropped on their conversations. Such "human mediators" (Martin, 1991, p. 50) were able to delay or interfere with the smooth, safe, discrete, and speedy rhythm of the telephone communication channel.

Telephone operators were an integral part of Bell Telephone "because they were *part of the communication channel* [emphasis in original]. Their correct etiquette was essential to the smooth and frictionless communication between subscribers, and therefore, their bodies and minds were designed and managed like the rest of Bell's media apparatus" (Carmi, 2015, p. 315). Telephone operators were human processors who were responsible for the success of Bell as a service that provides fast connections and an answer to everything the subscribers desire.

This is precisely why telephone operators were selected according to specific criteria: "Among the more important items considered are intelligence, health, sight, hearing, voice, size, temperament, character, appearance, and previous record" (LaChance, 1931, p. 13). Treated as objects of the company, their condition had to be in a good shape for them to function in the demanding physical, mental, and emotional work they had to perform. As I argue elsewhere (Carmi, 2015), telephone operators embodied several key features of cybernetics (whose main members stemmed from Bell) such as detection, s(m)oothing, filtering, prediction of future signals in the presence of noise, storage, and memory (Pierce, 1980). Importantly, these functions were performed by deploying processed listening to produce efficient communication channels.

As mentioned above, the telephone infrastructure and devices were at a premature stage and the sounds on the line were indecipherable to a "normal" ear. An important function that the telephone operators

performed as part of their work was translation between human and machine languages. The operators had to distinguish between a signal and noise on the line, decide what was actually said, and filter out the noise, all within seconds. This decoding work was done so that operators could determine the connection wanted by the subscriber:

> The variety of voices, loud and soft, accents, brogues, drawls, and other speech differences and nuances is wide. When a new operator first listens to telephone calls being given by a cross section of these voices, almost all of them sound to her like so much jargon. Her consternation at being expected to understand these people quickly turns to amazement when she finds that the experienced operator promptly acknowledges the orders and accurately completes the calls. (Clark, 1950, pp. 125–126)

Operators' work involved complicated actions that had to be performed in a matter of seconds. Machines were not able to conduct such functions as efficiently as operators, because there were too many complex procedures that had to be performed at the same time. The telephone operators had to monitor, measure, and record different aspects of customers' habits and experiences to produce knowledge that Bell would use to improve and maintain an efficient service. The kinds of things that the operators needed to measure were

> What was the time interval in seconds required to establish the connection?; Was any difficulty experienced?; What were the transmission characteristics?; How many calls failed of completion because the called party's line was busy, or because of no answer or slow answer or faulty operation, or for other reasons? (Harrison, 1938, p. 153)

This meant that operators had to be accurate in the measurement and detection as this knowledge also helped to create new services. In addition to knowing subscribers' patterns of behaviors, operators had to monitor, measure, and record the equipment's functioning and infrastructure operation. Part of this maintenance was conducted by having to monitor, report, and fix malfunctions of the telephone apparatus. Telephone operators had to remember what to do in various situations, functioning as storage and memory of Bell's apparatus. Using their memory, operators were able to adjust their behavior according to previous situations and to be more efficient the next time. All of these actions and decision-making processes had to be done within seconds, because it was important to create a feeling of immediacy, that people can get what they want without disturbances.

Immediate Experience

Telephone devices and infrastructures were not so reliable in the early 20th century; therefore, operators acted as support systems to the whims, anger, and frustration of the (mostly men) subscribers who were using them. Operators would sooth anger about problems with the system using their friendly tone branded by Bell as the "Voice With the Smile," sounding happy to satisfy the subscribers' every need. Some of this anger was caused by delays and malfunctions of the service, devices, or transmission. Bell was very concerned about the "user experience" aspect, and especially about speediness of the service, as it clarified in relation to the need of operators to sometimes intervene to solve various problems on the line:

> The telephone company is as anxious as is the user of its service to have each call go through smoothly, not only because it is always striving to make the service better, but because more work and more expense are entailed in handling a call that is delayed than one which goes through smoothly with no unexpected occurrence. (Bauhan & Goudy, 1942, p. 120)

Telephone operators who were responsible for fixing such problems were called *intercepting operators* and had to talk with subscribers to try to understand the cause of the problem and provide a solution within 20 seconds. This interception involved discussions with the subscribers and conducting processed listening to various sources in the telephone apparatus to understand what was wrong. The operators had to make decisions about what to do in each case, solve the issue, and write a report. By conducting processed listening to the frequency and constancy of different signals on the line, the intercepting operator could detect the cause of the malfunction and solve various problems such as congestion of calls, customers who made errors, equipment failure, or infrastructure problems. It was their ability to tune in and listen to several locations on the telephone apparatus, while measuring rhythms of the transmission, detecting the problems and fixing them, that enabled them to create the immediate feeling for customers.

As part of their training and strict working conditions, telephone operators were expected to increase their work rhythm and act like machines, using repetitive movements and phrases at a fast pace, while being efficient and providing affective labor with the "Voice With the Smile." Breaking and dividing their work into many elements, which was inspired by Taylorism, facilitated a reordering of the ways they talked and operated the apparatus. These operations were called "drills":

> To augment the learning and skill obtained through controlled practice, particular emphasis is placed on those phases of operating where the necessary speed and proper techniques can be acquired only by constant repetition. These repetitions are called "drills," and permit the operator to concentrate on a particular operating feature and develop the dexterity desired. Throughout the training period, drills are scheduled on such procedures as the location of subscriber line numbers in multiple banks, use of keysets or dials, becoming familiar with route and rate information on reference bulletins, and similar items. (Clark, 1950, p. 125)

In this way, operators were produced according the Taylorist approaches of body optimization according to particular rhythms. As Stephen Norwood (1990) observes, Bell's engineers developed standards for operators' work load and used stop watches to determine how much time each step of the process should take: "Good work was defined as fast work" (p. 63). As Jill Cooper (1997) argues, the simplest sequence of movements of telephone connection required at least 11 separate processes to be performed by the operator. She adds that the "ever-present supervisors timed and monitored the speed, politeness, and accuracy with which operators completed calls" (p. 495). So, although the operators' work was physically and emotionally challenging, "efficiency records were kept for each operator and were reflected in her pay" (Cooper, 1997, p. 495) to motivate them to be faster. This gave inspiration to cyberneticians who developed an approach of automatic machines that could provide fast solutions by using statistics.

Such need for speed and feeling of an immediate experience of instantaneity with media were ideas that were also developed by the British programmer John von Neumann. These ideas were designed into his famous architecture model called the Von Neumann Architecture in the late 1940s. This special design, as Robert Gehl (2011) shows, combined the instantaneity of the computer's processor (in the shape of the CPU - central processing unit) and storage, which is the memory. The processor focused on the speed and divided its functions according to discrete actions to be more efficient. The memory functioned as a sort of long- and short-term storage, similar to the way the telephone operators used their brains. As Gehl observes, "by the 1960s, advanced computer designers strove to make the computer feel as if it were reacting immediately to the whims of the user, a mode of computing called 'real time' processing" (p. 1231). 'Real-time processing' promoted the feeling of immediacy and instantaneity and became the default setting in computing.

But as Wendy Chun (2011) shows, there is more to the 'real-time' interface design than just efficiency and immediacy; it is also about the automation of command and control. As she argues, this feeling of satisfying users' desires and demands was a key computation development that derived from the "master–slave" dynamic that the ENIAC (electronic numerical integrator and computer) women operators embodied (who were the successors of the telephone operators). Embodying the media they operated, hidden media workers were trained to deploy processed listening by performing the capacities of both the central processing unit and memory. This was revealed to be an important function for media companies to have a competitive edge. Processing in 'real time' while hiding the decision-making processes behind such processes was to become a key strategy in developing media services. One of the most prominent ones is using CCMs in one of the biggest social media companies to date: Facebook.

Silent Processors on Social Media

Several decades after the automation of telephone operators' work, CCMs, as Sarah Roberts (2016) terms them, have been deploying processed listening through media to produce efficient communication channels. This section focuses on CCMs who work for Facebook, the biggest social media platform in the West, with more than 1.4 billion daily users (Facebook, 2018). Facebook operates multiple spaces within its platform where people, groups, celebrities, politicians, brands, and advertisers can interact through people's profiles, Messenger, groups, pages, newsfeeds, events, news sites, games, marketplace, and more. Because of the diversity of people, places, religions, genders, and tastes people have on the platform, it is important for Facebook to keep it "safe" from any harmful, inappropriate, hateful, disrespectful, and other problematic things that might drive away people and, more importantly, advertisers.

According to Nick Summers (2009), this "internal police force" was sitting in Facebook offices in the United States, and, in 2009, consisted of approximately 150 people. Today, there are about 7,500 CCMs working for Facebook (Koebler & Cox, 2018). As Summers observes, "part hall monitors, part vice cops, these employees are key weapons in Facebook's efforts to maintain its image as a place that's safe for corporate advertisers" (para. 2). One of the first times that Facebook discussed these hidden workers was on June 19, 2012, when it revealed on its Safety Page information (the link is no longer available) regarding the processes that happen in the back end of the platform after users report things. According to the post,

> To effectively review reports, User Operations (UO) is separated into four specific teams that review certain report types—the Safety team, the Hate and Harassment team, the Access team, and the Abusive Content team. When a person reports a piece of content, depending on the reason for their report, it will go to one of these teams. (Facebook, 2012b, para. 3)

Although existing for several years, Facebook does not elaborate on the work of content moderation teams. These positions were not found in the Help section when I searched for them. In fact, there is no information in regard to what they do, what training they go through, what their work conditions are like, what kinds of guidelines they receive, and so on. To this day, it is quite difficult to find information from Facebook about CCMs. As Tarleton Gillespie (2018b) argues, "For more than a decade, social media platforms have presented themselves as mere conduits, obscuring and disavowing the content moderation they do" (para. 4). This is where technology websites were useful.

CCMs are hired, according to journalist Adrian Chen (2014), by Facebook through outsourced third-party companies. These workers are usually hired in the Philippines as the country's relationship with the United States allows workers to understand the social standards, but importantly, they are cheap labor. CCMs, as Roberts (2016) argues, are employed by social media platforms to filter problematic content. But to do that they have to conduct processed listening within the multiple spaces across social media to separate between what Facebook decides is the signal and noise, the appropriate and inappropriate.

The work of CCMs is crucial to filtering unwanted behaviors from Facebook, but they are kept hidden for several reasons: to naturalize their work as part of the 'real-time' algorithmic experience, to ensure they are not accountable for their work, to prevent them from disclosing their work protocols and ethics, and to save money. According to Chen (2012), there are at least two kinds of content moderators: (1) "active moderators," who filter posts in 'real time'; and (2) "reactive moderators," who filter only if content has been reported by users as inappropriate. The list of problematic content categories is a mirror of Facebook's community standards, which include topics such as pornography, gore, minors, sexual solicitation, sexual body parts/images, and racism. In this way, CCMs conduct processed listening to filter out what Facebook considers antisocial to maintain its title as a social network.

When things are reported by people, they are sent to the moderating team and then go through three filtering processes: First, content can be "confirmed" as inappropriate, which means content is a violation according to the protocols of the company and is erased from both the user's account and all of Facebook. Second, the content can be "unconfirmed," meaning that it is not deemed offensive, and stays on the platform. The third process is "escalation," which means that CCMs have to report the content to a higher level of filtering by sending it to Facebook's higher ranked employees (Chen, 2012). This team is called "Risk and Response," and CCMs have to deal with "the hardest and most time-sensitive types of content," and work "with the policy and communications teams to make tough calls" (Koebler & Cox, 2018, para. 32). All of these procedures happen at the back end, hidden from "normal" users because of the specially designed architecture.

The moderation training manual that Chen (2014) revealed, titled "Abuse Standards 6.1: Operation Manual for Live Content Moderators," provides insights into the work procedures that CCMs have to follow. Once something is reported (content or behaviors), operators have to determine the identity of the user by deploying the "name match policy," which means that they need to tune into people's profiles to verify whether the name of the user who reported and the person in the comments/post/image are the same. This processed listening action is hidden and conducted without the knowledge of ordinary users as they are not signaled through visual or audio cues that someone is tuning into their space. CCMs also need to determine the context of the content, whether the intent behind it is humor, insult, solicitation, or political. Moreover, CCMs have to assess the credibility of hate speech; they have to distinguish between an empty threat, credible threat, referencing negatively, cyberbullying, attacks with hate symbols, and attacks based on being a sexual assault victim. Then, the moderators have to distinguish, decide, and filter (remove, suspend, or escalate) between different types of violations. At the end of the processing procedure if content was filtered out, then users are notified, but given limited information regarding the rationale behind the decision or means to appeal it.

In situations when violence is reported, content moderators are also given instruction on how to assess credibility by using a three-step test that has a yes-or-no answer at each stage: consequence (who is the proposed violence targeted at), specificity (whether the content specifies time, place, method, or target), and practicability (whether it is possible to carry out the violence proposed). They also have to determine the type of user as Facebook provides a classification of people and the way moderators need to act according to each class. There are ordinary users, public figures, law enforcement officers, and heads of state. There is a further classification of what the manual calls "protected categories": race, national origin, religion, sex, gender identity, sexual orientation, disability, and serious diseases. After they finish dealing with a violation, CCMs write a report. They also have to remember what to do in various situations to improve the efficiency of their work. Finally, CCMs have to adjust performance according to previous situations. In this way, CCMs have to know how to respond in each of these scenarios, take each category into account, and apply regional-specific considerations.

On April 26, 2012, Facebook launched its Support Dashboard feature, which allows users to know when their report is received and also gives an indication of why a certain action was taken or not regarding the report (Facebook, 2012a). Facebook, however, does not reveal how many people have reported on a piece of content. Such information can persuade users to complain (e.g., #WhyIDidntReport which encouraged people to share their sexual abuse) and even lead them to rebel against certain decisions (e.g., their removal of female nipples or mothers who breastfeed). In the 2015 version of its community standards, the company addressed this by saying that "the number of reports does not impact whether something will be removed. We never remove content simply because it has been reported a number of times" (Facebook, 2015). This statement, however, leaves out what does impact their decisions.

As these work procedures show, CCMs conduct processed listening by monitoring, detecting, categorizing, filtering, and reporting different types of things, which require a fast decision-making process. Such actions happen within seconds, and the content moderators are trained, just like Bell's operators, to make decisions about sensitive and problematic materials as fast as automated machines. Describing the work of one such content moderator, Chen (2014) says that he "has only a few seconds to decide. New

posts are appearing constantly at the top of the screen, pushing the others down" (para. 12). This is a human cleansing device, or as one content moderator described it, "Think like that there is a sewer channel . . . and all of the mess/dirt/waste/shit of the world flow towards you and you have to clean it" (Chen, 2012, para. 29). Monitoring various spaces across social media, CCMs work under the pressure of time, having to monitor multiple spaces, detect whether there is a violation or problem, categorize according to specific guidelines, and filter out the noise, all within seconds. This demand is meant to create a feeling of immediacy, of 'real-time', uninterrupted experience on the platform.

"Real-Time" Filtered Experience

As a Facebook content moderator in Germany revealed (Punsmann, 2018), CCMs work in offices that feel like "production line" factories given that they are expected to process hundreds of reports per hour. Every aspect of their work is calculated, including their breaks. Importantly, CCMs are trained to work in an extremely repetitive work sequence that demands fast rhythm and make important decisions within seconds during long shifts. This is to avoid "latency," "a measure of the time delay introduced by a particular element in a computer system," as Lilly Irani (2015) observes in relation to microworkers' task completion speed (p. 726). She argues that technology designers believe that a "good" design is one that is immediate, and that such "assumptions drive efforts to maximize 'task velocity' so human computation can fulfil expectations of interactive computer technologies" (p. 726). CCMs describe this feature of their work as automation of actions, which increases alienation:

> The moderator has not only to decide whether reported posts should be removed or kept on the platform but navigated into a highly complex hierarchy of actions. The mental operations are evaluated as being too complex for algorithms. Nevertheless moderators are expected to act as a computer. The search for uniformity and standardization, together with the strict productivity metrics, lets not much space [*sic*] for human judgment and intuition. At the end of the ramp-up process, a moderator should handle approximately 1300 reports every day which let him/her in average only a few seconds to reach a decision for each report. (Punsmann, 2018, para. 10)

According to James Grimmelmann (2015), "moderators shape the flow of content and do that by deploying several functions such as deletion, editing, annotation, synthesis, filtering and formatting" (p. 59). These are part of the actions CCMs have to conduct when they perform processed listening. To do that, the moderators need to tune in and out of people's actions or content in various spaces such as posts, comments, profiles, pages, events, and images. This process also has to take into consideration local requirements and laws. For example, "to comply with local laws, Facebook blocks users with IP addresses from those countries from viewing flagged Holocaust denial content" (Koebler & Cox, 2018, para. 95). In this way, CCMs have to monitor people's behavior and tune to their profiles and geolocations to take into consideration different regional categories when they make their decisions to filter, block, suspend, or delete content and actions.

In this way, Facebook hires human processors and gives them guidelines that provide a structured workflow, similar to the way in which algorithms are given instructions. Located at the back end of social

media's interface, both CCMs and algorithms have far greater listening capabilities in terms of scope (tuning into multiple spaces) and depth (tuning into people's profiles, private messages, and locations), but also in terms of the functions they can operate. Content moderators, like the telephone operators, are meant to monitor, measure, determine, categorize, and filter the signal and noise within seconds to maintain the stability of the medium. Both are supposed to use their memory and adjust their behaviors according to past performance. They are trained to work like machines and embody the communication channel and filters. Their rhythms are supposed to be as close to robotic as possible, so that the communication on these media will feel immediate and natural as if not interfered with. They are also cheap labor that is replaceable and kept hidden from the subscribers of the service. At the same time, these hidden workers help to understand the local nuances that automated procedures conducted by machines and algorithms cannot compute.

Despite CCMs and other procedures being kept hidden, Facebook argues that it promotes transparency. In Facebook's Principles, a section that no longer exists, its ninth principle was about a "transparent process": "Facebook should publicly make available information about its purpose, plans, policies, and operations. Facebook should have a process of notice and comment to provide transparency and encourage input on amendments to these Principles or to the Rights and Responsibilities." It is quite telling that this principle no longer exists, as Facebook seems to be hiding many of its plans, rationale, policies, and, importantly, its workers.

Hidden in the back end of their media apparatus, humans employed by media companies operate as part of the communication channel and tune in and out of various spaces in the media architecture. One of the main similarities among these types of media workers is their need to make transitions between different layers of the media infrastructure they operate. While telephone operators tune in and out of subscribers' lines as well as the overall telephone infrastructure, CCMs do the same with different users, pages, groups, events, and so on. If they find problematic things, they then have to go through specific protocols and filter them out according to local considerations. They conduct this processed listening without interrupting the normal subscribers' experience, as this is done in the back end to conceal the processes that are taking place.

In Facebook's case, this is done to maintain the platform as a friendly place for its users to spend more time and engage as much as possible and, hence, bring more profit to the company. But Facebook also keeps its platform safe for governments that constantly ask to intervene in various ways such as deleting, suspending, and filtering people (e.g., journalists or activists), actions, and pages (Zidan, 2018). Importantly, the company also needs to keep the platform sanitized for advertisers, as they are its main financial source.

Content moderators are kept hidden because, as automation developed, it became crucial to present ordering as objective and technical procedures that are not influenced by other factors (Gillespie, 2018a; Roberts, 2016). Various computation procedures such as algorithms, protocols, and cookies (Carmi, 2017) are portrayed as "organic," "natural," and "technical" mechanisms that facilitate the online territory. In this way, they shape users' tempospatial experiences of the mediated territories. Presenting the ordering of media as organic and natural helps to disguise the politics behind its rationale. It helps to avoid questions

around how this ordering affects the way users understand their subjectivities, how they can behave in these territories, and what they can demand from media companies.

Such experiences of real time, although constructed differently by different platforms (Weltevrede, Helmond, & Gerlitz, 2014), are exactly the reason why content moderators are not celebrated as a branding device like the telephone operators. Nevertheless, this keeps the social media company's competitive edge. So, "despite Facebook investing heavily in artificial intelligence and more automated means of content moderation, the company acknowledges that humans are here to stay" (Koebler & Cox, 2018, para. 131). As automation of services and immediacy become the standard of experience on the Internet, it is important for companies such as Facebook (but also others such as Google and Amazon) to argue that their algorithms are operating without any human intervention.

Conclusion

In this article, I have amplified the work of the hidden listeners in media, specifically by making a link between switchboard telephone operators and social media commercial content moderators. Telephone operators were trained to monitor the infrastructure, detect malfunctions, and understand what customers were saying, sooth their anger, and filter noise from the signal, all while using their memory to predict future malfunctions. They were part of the communication channel and its filter. Importantly, as telephone operators were able to fix the apparatus, like engineers, another key characteristic they embodied was feedback: the ability to adjust future conduct according to past knowledge. These functions were later partly delegated to automatic communication channels operated by several technologies such as codes, algorithms, and protocols. However, their crucial position in hiding decision-making processes and maintaining a competitive edge means that their position was not completely erased but rather changed into a new title: content moderation.

Whereas the telephone operators provided a competitive edge promoted as desirable objects (young, beautiful, unmarried women), content moderators are also hired as a competitive edge but are kept more hidden. Similar to the telephone operators, content moderators also have to monitor and detect problematic content, people, or brands, and then categorize, filter, and report them according to specific instructions (according to manuals that are updated constantly). They have to remember these actions so that they can predict future problems, and perform these procedures over and over again in a fast rhythm of repetitive processes. Filtering means they intervene in the ordering and presentation of objects, users, and pages on newsfeeds, without users' knowledge. They do this by deploying processed listening, tuning in and out of multiple locations in the back end of the media apparatus, and performing various procedures to maintain the media as efficiently as possible and, importantly, profitable.

CCMs are an integral part of Facebook who help enforce and balance the many factors, rules, and parameters of advertisers, governments, and users. People, then, are paramount to the functioning of Facebook because the service cannot count solely on algorithms and architecture design to operate its medium. Importantly, media companies want to turn humans into processors (Gehl, 2011) by using Taylorist approaches that divide their work flow into distinct repetitive elements, creating an assembly-line work space, and increasing the rhythm (in terms of speed of their movements but also repetitiveness) of their

work. These repetitive operations are conducted continuously, to create the illusion of immediacy and real-time experience. Content moderators are trained to become algorithms, hidden from users and other actors; they keep the network social.

As I have shown, there is a decision-making process used by these human communication channels. Their work can determine which people and behaviors are considered illegitimate, deviant, noisy, or spam. By doing so, media companies want to avoid having important discussions on the way they establish what is a disturbance, an illegitimate behavior or groups of people. They shift the responsibility to automation, these things they supposedly have no control over because they function in an automated, engineered, and objective way—just following orders. Such examples can be seen also in Google, which employs hidden workers known as "search quality raters" and "precision evaluators" (Bilić, 2017) to improve its search engine results. These workers, who operate as communication channels and filters of the biggest search engine in the Western world, are responsible for the way people engage with knowledge, news, and information. These decisions have immense social, cultural, political, and economic implications that are kept hidden and unaccounted for. It is time we start listening to them.

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