

Media Distortions

**UNDERSTANDING THE POWER BEHIND
SPAM, NOISE, AND OTHER DEVIANT MEDIA**

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Elinor Carmi

Media Distortions is about the power behind the production of deviant media categories. It shows the politics behind categories we take for granted such as spam and noise, and what it means to our broader understanding of, and engagement with media. The book synthesizes media theory, sound studies, science and technology studies (STS), feminist technoscience, and software studies into a new composition to explore media power. *Media Distortions* argues that using sound as a conceptual framework is more useful due to its ability to cross boundaries and strategically move between multiple spaces—which is essential for multi-layered mediated spaces.

Drawing on repositories of legal, technical and archival sources, the book amplifies three stories about the construction and negotiation of the 'deviant' in media. The book starts in the early 20th century with Bell Telephone's production of noise, tuning into the training of their telephone operators and their involvement with the Noise Abatement Commission in New York City. The next story jumps several decades to the early 2000s focusing on web metric standardization in the European Union and shows how the digital advertising industry constructed web-cookies as legitimate communication while making spam illegal. The final story focuses on the recent decade and the way Facebook filters out antisocial behaviors to engineer a sociality that produces more value. These stories show how deviant categories re-draw boundaries between human and non-human, public and private spaces, and importantly, social and antisocial.

Dr. @Elinor Carmi is a feminist, researcher, journalist and digital rights advocate, who has been working on deviant media, internet standards, sound studies, and internet governance for the past decade. Elinor is a Postdoc Research Associate at the Communication and Media Department at Liverpool University in the United Kingdom, working on the project "Me and My Big Data: Understanding Citizens Data Literacies". Before academia, Elinor worked in the EDM industry, edited music television channels and was a radio broadcaster. In 2013, she published her first book *TranceMission*.

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ADVANCE PRAISE FOR

Media Distortions

“*Media Distortions* provides an original, insightful and engaging counter-account of spam and noise as deviant media which have been paradoxically constituted as such to bring about a series of crucial transformations in our technologies and cultures of communication. Drawing on specific historical case studies and extending right into our present, by reverse engineering of the history of spam, Elinor Carmi brings a fresh perspective to bear on a media phenomenon which has received little critical attention.”

—Tiziana Terranova, University of Naples,
author of *Network Culture: Politics For the Information Age* (2004)

“Elinor Carmi offers a lucid and detailed examination of the taken-for-granted ‘deviant’ categories and processes of spam and noise. Significantly, through the focus on seven strategies of practitioners, the book convincingly demonstrates how common sense perceptions of these two categories are produced by power relations that make up both online and offline spaces of the everyday.”

—Evelyn Ruppert, Goldsmiths, University of London,
author of *Being Digital Citizens* (2015)

“‘Distort and deviate’ is the best summary for the mode of power Elinor Carmi’s exciting book analyses. The book’s rhythmic approach to noise and spam demonstrates how those seemingly unwanted aspects are at the centre of how contemporary territories and subjectivities are being formed and trained, measured and counted. *Media Distortions* is essential reading to understand contemporary network culture through a new pair ears, and many many new ideas.”

—Jussi Parikka, Winchester School of Art, author of *Digital Contagions:
A Media Archaeology of Computer Viruses* (Peter Lang, 2016)

“In *Media Distortions*, Elinor Carmi offers an innovative approach to digital media. By drawing on sound studies, *Media Distortions* puts forward a novel conceptual framework of ‘processed listening,’ which enables us to rethink noises, digital disturbances, spam, and deviant media in our lives. For Carmi, the sound of noise is not a nuisance, but an invitation to reveal hidden power relations that deeply shape who we are and how we think.”

—Robert W. Gehl, University of Utah, author of *Weaving the Dark Web:
Legitimacy on Freenet, Tor, and I2P* (2018)

Media Distortions



Steve Jones
General Editor

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Elinor Carmi

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Spam, Noise, and Other Deviant Media



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This book is dedicated to my family—The Carmi's.

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London, 2019

Abbreviations

API	Application Programming Interface
A29WP	Article 29 Working Party
CCM	Commercial Content Moderators
DSP	Demand Side Platforms
EU	European Union
FIS	Facebook Immune System
FQP	Feed Quality Panel
GDPR	General Data Protection Regulation
IAB	Interactive Advertising Bureau
IETF	Internet Engineering Task Force
NYC	New York City
NAC	Noise Abatement Commission
NGO	Non-profit Organization
RTB	Real-Time-Bidding
SSL	Secure Sockets Layer
SSP	Supply Side Platforms

Introduction: Listen Closely

I just want to make it clear from the beginning that I am not going to fix your spam problem. Part of the perks of doing research on spam is having to explain it, and then getting people to want you to fix their email spam. “Oh really? I have so much spam in my inbox you have to help me!” Every. Single. Time. But then, after a while, I realized how deeply rooted people’s understanding of this media phenomena is—that it is that thing that should be shoved into a folder to be forgotten forever. This was one of the strongest indications of how much this topic was neglected, but at the same time brought to the fore how spam elicited very strong, disgusted emotions from people. But it was not only overlooked by my family, friends, and those people who start to talk to you in the tube at 8 A.M. before you had your coffee, but academics as well.

Despite being an inseparable part of our lives, we actually know very little about this media phenomenon. Spam is a ‘thing’ that computer scientists should deal with to make our lives easier and more efficient. But what exactly *is* spam? Is it a format? Is it a software? Is it a Nigerian prince? Or is it Monty Python’s excellent sketch? It is all of these and none of these altogether. Like most social sciences scholars, I am not going to give you a short and simple answer; this is why this book is here. But what I am going to do throughout the following pages is show you the politics of making spam, well, *spam*. I am going to show you how

spam has always existed, received different names in different periods, and in fact is extremely important to the way we understand ourselves and our surroundings.

So how does spam relate to our everyday lives? Think about it this way - We process things every day. We process different kinds of information to make sense of the world: the experiences we had on our last vacation, the last conversation we had with our broadband supplier (although, we wish we could forget that one), and the details of that media course we took at the university. These processing procedures are driven by our background, standards, experience, emotions, level of (good) coffee in our blood and other factors. But these procedures also give meaning and order to people, things, and events; which in turn affect the way we form our identity, make decisions, behave, and feel. For example, in January 2016, I watched the new X-Men film, *Apocalypse*, and after processing it, I realized I was bored with superhero films and would probably not watch another one any time soon. That changed after watching *Deadpool* a few months later.

Media technologies also process things. People design media technologies to measure, collect, categorize, organize, sort, filter and order different forms of information, from text to images and sound. As I am writing this paragraph in Microsoft Word Processor, the computer software is receiving the input I give it through my keystrokes and translating the information into English letters. These letters appear on the 'front end' of the screen simultaneously to my button pushes, according to instructions and standardised formats (Arial font, size 12, 1.5 line spacing) and other conventions (white 'paper', left to right, 'normal' margins) developed and standardised by Microsoft. Whether conducted by humans or machines, processing is never neutral: it is a mode of power.

It is exactly this power behind media standards, categories, and processes that this book aims to reveal, especially those portrayed as deviant, evil and unimportant. Spam and noise are usually conceived as 'technical' media categories and are taken for granted. Engineers and computer scientists present these categories as machine disturbances that should be eliminated. But, even if we try to ignore them, both spam and noise are part of our everyday life experiences with media. Who created these categories? Why and with what rationale? Who does this category serve? How do these categories affect the way we engage with and understand media? To address these questions, this book takes a few steps back and listens to the whole symphony, beyond the conventional understandings of these categories.

The evolution of the concept of spam has involved conflicts, standardization, competing arguments, and specific infrastructures that helped shape our current understanding of spam. It is precisely these procedures that should be questioned

and re-told in a way that will reveal how we reach our ‘common sense’ perceptions of this phenomenon, and the various motives and factors involved in the way it has become a ‘truth’ discourse.

In his documentary *This Film is Not Yet Rated* (2006), Kirby Dick exposes the politics behind the American Film Industry’s rating system. The Motion Picture Association of America (MPAA), as the documentary shows, is a ‘voluntary’ organization that rates all the films that come out to the cinema. For each film, the MPAA provides a rating according to the age group they think the content fits. Ratings range from: G (General Audiences), PG (Parental Guidance Suggested), PG-13 (Parents Strongly Cautioned—some material may be inappropriate for children under 13), R (Restricted—under 17 requires accompanying parent or adult guardian), and the harshest rating—NC-17 (No children under 17 admitted). Dick shows the politics behind these rating standards and their consequences. He shows how the big film studios pay money to the MPAA board, which allows their films to get more lenient ratings than independent studios.

In one of the interviews in the documentary, Matt Stone, one of the creators of *South Park*, argues that they received a completely different treatment from the MPAA for their film *Orgazmo* (1997), a sex comedy produced in an independent film studio Troma Entertainment, and *South Park: Bigger, Longer, Uncut* (1999), which was released on Paramount Pictures. With *Orgazmo*, Stone and his co-creator Trey Parker got no explanation as to why they received NC-17 rating, while with *South Park* they received a call from the MPAA telling them which scenes to cut or edit to get a better rating. Part of the politics that Dick shows is how LGBTQ+ sex scenes are more strictly rated than similar scenes portraying heterosexual sex scenes. For example, Kimberley Pierce, the creator of *Boys Don’t Cry* (1999), talks about the way scenes of one of the lesbian characters portrayed had to be cut from the film. Pierce says there was no explicit sexual visualisation in the film, only a close-up on the protagonist (Lana)’s orgasm. In addition, Dick shows how scenes that portray violence get much more relaxed ratings. In this way, American conservative values are baked into the way films are made; and since much of the Western world sees at least part of these films, their influence is significant.

Ratings matter because they affect distribution of films and how they can be promoted. For example, if a film gets the notorious NC-17 rating, it will not be screened as widely and will not get ads in various media to promote it. Importantly, ratings affect the way we understand different cultural and social categories such as sex, gender, violence, relationships, and ourselves. Ratings involve decision-making processes around standards and values that affect the way

they are mediated. But what happens when these decision-making processes are automated and delegated to machines and algorithms? What happens when it is not only narrative that is being reordered, but the architectures and interfaces we engage with in our mediated lives? What kinds of things are hidden from us and how does hiding them affect how we behave, think, and imagine? Just because the decision-making process becomes more automated, does not mean that there are no humans behind such procedures. It is just much more difficult to separate them and point to their bodies. So let us dive into the wires, shall we?

Don't Be Evil! But I'm Not!

The main objective of this book is to make a theoretical intervention that develops an understanding of the processes that (re)produce deviant media. Spam and its earlier configuration, noise, need to be understood as key media categories that are used as powerful instruments to influence the way people and spaces are processed and (re)configured through media. The power of using these categories lies in their ability to influence the way boundaries are drawn between what is human and non-human, what is a legitimate behavior and importantly—what is sociality.

Media Distortions begins with several interrelated assumptions. First, that there is a lack of scholarly work on spam. This assumption is important, as many media and communication scholars do not consider spam to be a media phenomenon at all. When I started to search for academic material on spam, I was surprised by how few people have engaged with the topic and realized that most of the texts written on spam have originated from computer scientists. The problem with those texts is that they already had a rough idea of what spam is or is not, whereas I wanted to dig deeper. These scholars tend to adopt conventional presumptions about what constitutes media and communications, without questioning *why* and *how* these categories and practices have been categorized as such.

These questions are exactly what I am focusing on in this book. I aim to listen beyond the statistical measures scholars use to naturalize power relations embedded in creating spam as a media category. Instead of understanding spam as a binary topic, I wanted to show the nuances and struggles behind the way it has been created. I realized that there is a real need to have more understanding of spam from the perspective of the social sciences and humanities.

When I started my research, Finn Brunton, a media and communications scholar from New York University, published the first thorough work on spam. However, Brunton's argument that "spamming is the project of leveraging

information technology to exploit existing gatherings of attention” (2013: XII), explains only part of the story. Spam, and other deviant media categories such as noise, are indeed an attempt to harness people’s attention. However, constructing specific behaviors as wanted and unwanted serves as a control mechanism to shape the way people are filtered through, engage with, and understand media technologies. Spam and spamming have become meaningful through processes of categorization (or lack thereof as I will show in Chapter 4) and their operationalization. Thus, spam is much more than a battle for attention; it is used to produce and manage people’s bodies, preferences, behaviors, and understanding of mediated territories. Therefore, *Media Distortions* plays a different tune.

Which leads me to the second assumption. Brunton (2013) framed the time period of spam in three ‘epochs’: first, computers and networks before the internet between 1971 and 1994; second, the introduction and commercialization of the World Wide Web between 1995 and 2003; and third, the introduction of social media from 2003 until today. In this way, Brunton focuses mainly on the (conventional) way spam functions on the internet. However, this book takes spam as a much larger project of (re)producing people and territories, and these are not confined merely to the internet. Therefore, instead of examining ‘the usual suspects’ of the spam media category, as Brunton does, such as chat rooms in USENET¹ and Nigerian Princes scams, I examine the ambiguity of spam and show how flexible and permeable the boundaries are. Importantly, *Media Distortions* shows how this ambiguity and fluidity of what seems to be a fixed category is used by media companies to make important decisions about who and what get to be categorized as deviant – it is about power. Examining spam from a broader perspective that moves between territories and time periods allows (media) scholars to follow continuities and similarities in strategies deployed by the use of media categories.

The third assumption is that sound and its associated concepts, in particular, listening and rhythm, can be more productive when examining power relations enacted through and by media. It is quite astonishing that our whole way of thinking about knowledge and power relies on optic vocabulary. We commonly use terms like ‘I see’, ‘it is clear’, ‘I look at’ or ‘observation’ as ways to indicate we understand or know something. This was quite an exercise for me writing this book, as every time I instinctively wrote ‘looks at’, ‘seeing’ or ‘vision’, I had to think about an alternative word and rephrase the sentence. We also often use phrases such as ‘black box’ and (in)visibility to describe things that are ‘opaque’ in media networks. Because this conceptual framework is so ingrained into our thinking, it has also dominated our ways of doing research. As James Bridle argues in his recent book:

We often struggle to conceive of and describe the scope and scale of new technologies, meaning that we have trouble even thinking them. What we need is not new technology, but new metaphors: a metalanguage for describing the world that complex systems have wrought. (Bridle, 2018: 5)

This book seeks to open another way to think, conceptualize and do research into media power by using sound as a theoretical framework. Sound is also important to me personally. I have been passionate about music and sound throughout my whole life, from being a radio broadcaster of electronic dance music, editor of music television channels as well as working in the music industry, writing about music for *Time Out Tel Aviv* and other magazines and even my first book *TranceMission* (about the Israeli Psytrance culture). Not to mention that from the age of 13 I have been going to thousands of parties, concerts, festivals and shows that made me think, move, and communicate better. Sound and music are powerful ways to communicate, feel, and think about things; they *resonate*.

Sound can express things that cannot be said with words. After experiencing the ways artists and DJs use different elements of sounds through mixing and the speakers to move people's bodies, minds, and emotions, I knew that rhythm and the ability to conduct it holds a productive power. Nina Kraviz manages to enchant me with her Techno sounds; dancing at the Block club in Tel Aviv and immersing myself in the fast beating sounds and the light, smoke and sweaty bodies dancing next to me it feels like euphoria. Pulp made me jump like crazy under pouring rain at Melt Festival in Germany while invigorating my nostalgia of the days I was listening to their albums on repeat as a teenager. I have a song or album for each one of my ex-boyfriends, reminding me of different moments we shared. Die Antwoord made me dance and scream to their crazy energy, singing "I fink you're freaky and I like you a lot" at London O2 venue. Each of these artists used different instruments to shape, influence, guide and manage people's bodies, minds and emotions. Each person reacted differently, according to their past experiences, tastes and current state. Nevertheless, this experience was conducted by a powerful force, and this book will explore similar forces.

There is an overwhelming focus in the media and communication field (but also in STS, history of science, and digital sociology) on vision, (in)visibility and seeing as ways to theorize and conceptualize power and ways of knowing, especially when it comes to new media. Many scholars from different fields (Campbell and Carlson, 2002; Chun, 2006; Bucher, 2012) use Michel Foucault's (1977) thought experiment, taken from Jeremy Bentham's prison design—The Panopticon—as a metaphor to explain the surveillance architecture of the internet. The

Panopticon is a prison with a special design that puts a guard at the middle of a round architecture where the prisoners' rooms are scattered. Because there is an asymmetric architecture structure, only the guard can see the prisoners, and they cannot see him—making it unnecessary for the guards to be there. In this way, thanks to this specific spatial design, it does not actually matter whether the guard is actually there because the prisoners are disciplined to change their behavior by fearing they might be watched at any given moment. Scholars use the Panopticon to explain surveillance as discipline through modes of visibility which are used for commercial and government endeavours. Nevertheless, as the sociologist Zeynep Tufekci argues about the use of this metaphor, as well as using the metaphor of George Orwell's dystopian novel *1984*, we are living in a different type of dystopia:

The Panopticon is a thought experiment: a model prison meant to control a society of prisoners. But we are not prisoners. We are not shackled in cells, with no rights and no say in governance. In our world, pleasure is not banned; it is encouraged and celebrated, albeit subsumed under the banner of consumption. Most of us do not live in fear of the state as we go about our daily lives. (Tufekci, 2014)

I agree with Tufekci's point but take it a step further and argue that another problem with these metaphors has been their overemphasis and reliance on modes of visibility as ways of knowing (and controlling) objects and people, which consequently produce power relations. So while these accounts provide important insights, they are also limited (as I explain further in the next chapter). I propose two sound concepts in this book: I argue that by deploying *processed listening*, various media practitioners (individuals, organizations or governments), listen (monitor, measure, categorize, record and archive) to different sources (digital bodies or locations), by using several tools (manual or automatic), in different times for similar purposes—to (re)produce knowledge into quantified, exchangeable, and monetizable data. This dynamic archive is then orchestrated according to a particular rhythm I call *rhythmmedia* (by filtering, adjusting, removing, minimizing and deleting), which spatially and temporally orders and regulates people and objects, through multi-layered communication channels to produce a desired sociality.

This is not to say you need to replace all your vocabulary and ways of thinking (although it could be an interesting temporary experiment). I do not offer a complete overhaul of theoretical thought into sound. What I do propose is

that this theoretical approach, and the two previously discussed concepts, can be used as another way to examine power relations enacted through media. Although I mostly use listening and rhythm as analytical and conceptual tools, it does not mean that vision should be discarded. If anything, there is a need for an integration and acknowledgement of more senses, including touch (check David Parisi's [2018] work), for example. Such power dynamics involve many complex processes, and the term 'process' is central to this book, below you can understand why.

Conducting Processes

The term 'process' is used in this book as a central concept for several reasons. First, to draw attention to the fact that both humans and machines do this activity.² Humans process the world around them through their senses to make sense, understand, (re)order, and perform life. Computers process data that humans, other living beings, objects and/or other machines give them through inputs. This data is then translated into code that give instructions through specific protocols to execute programs. Second, a process is always part of other processes, and several processes can be connected to the same program or activity. Therefore, inter-related processes can be done at different times and in different spaces. In that sense, a process is relational and corresponds to other conditions, which are negotiated and conflicted. Such notions come from feminist technoscience theory, which reject essentialism and argue for processes that are co-produced by humans and machines (more on this in Chapter 2).

As processes get intermingled with different types of actors, it is important to explore beyond strictly human agency, which media studies tend to focus on. It is also important to explore beyond what the (somewhat) new software/platform/code/app studies focus on, which is the centrality of algorithms and code in ordering sociality through media. I want to emphasize that it is more fruitful to explore these processes as co-produced in different capacities and intensities. But, contrary to Actor Network Theory's (Latour, 2005) arguments about co-production, I do not assign symmetrical powers in this co-production; far from it.

Third, 'process' also points to the notion that these co-productive procedures are ongoing and constantly evolving processes. In the context of *Media Distortions*, these processes happen on several occasions: the unwanted media categories (from noise to spam and onto amorphous deviancy); the interest groups that aim to produce, structure, control and manage people and the mediated territories they

engage with; the strategies that they use; and, finally, the architecture—all of these elements change constantly. Part of the problem with still clinging onto fixed categories, as the geography scholar Reece Jones argues, is the fact we keep analyzing “the categories rather than the process of ‘bounding’ and ‘bordering’ of which these categories are the result” (2009: 175). Jones argues that categories are not mere representations of the world but also create, shape, organize, and limit it. Categories, he suggests, do not have stable boundaries³ kept in sealed containers; they are in a constant process of mutating and penetrating into one another, in what he terms an *inchoate process of bounding*.

Following this argument, what *Media Distortions* examines is the processes that precede the creation of deviant media categories and the (re)production, (re)negotiation, and (re)construction of these categories as time and space develop and shape their form and substance. Although Jones’s (2009) term corresponds with several notions of this book, there are still things that are missing that I will show below. Specifically, I illustrate how the term ‘conducting’ can be used as a powerful and political way to enact processes. Whereas *inchoate bounding processes* focuses on the form of categories and their fluid bounding procedures, I focus on how specific actors are using these flexible and permeable boundaries to enact power, and how these affect the conduct of others.

‘Conduct’ is a key term for Michel Foucault, whose theory of governmentality guides this book. As Foucault argues, “to ‘conduct’ is at the same time to ‘lead’ others (according to mechanisms of coercion which are, to varying degrees, strict) and a way of behaving within a more or less open field of possibilities” (1982: 789). It is precisely the way media companies lead through seemingly ‘free options of living’ that I focus on in this book. Moreover, a conductor also serves as a channel or medium of electricity or sound. Conducting is also related to the person who guides the sound’s rhythm, the ensemble of all the people who play the instruments, managing the movements and their tempo into a particular order of sound. Thus, conducting is an intentional use of power to guide, manage, control and order people, tools, actions, and processes towards a specific desired sound.

In the context of media, ‘to conduct’ is an important strategy to establish a power relation by creating the rhythm that orders subjects and territories. This means that conducting is the power to create, manage, and control the rhythm that orchestrates different elements that produce people’s mediated experiences. *Media Distortions* argues that this is conducted on people’s experiences be they on the streets of New York City or on the World Wide Web. I show how the different ways of conducting processes by using deviant media categories are characterized by Michel Foucault’s modes of governmentality: sovereign, discipline, and

biopolitics. But, while Foucault focuses on the notions of circulation (I use the term *rhythmedia*) of the city, including its architecture, roads, people, behaviors, and desires, I aim to show that similar strategies are deployed also in ‘online cities’ such as the European Union web and Facebook.

By putting these concepts together, *Media Distortions* develops a critical perspective and provides analytic tools for (media) scholars to challenge several types of boundary. First, interdisciplinary boundaries within and outside media and communications such as history, law, ‘new’ media, software studies, and sound studies. These boundaries have been instrumental in crafting specialities and focused research topics but have overlooked other important insights by not engaging with intersections, connections and genealogies that come through multiplicities. Second, the struggles and politics that lie behind producing legitimate media categories and importantly, the illegitimate ones. Third, as mentioned above, the boundaries between the involvement of human and non-human actors in these processes.

Breaking such boundaries comes from a feminist perspective, inspired by Donna Haraway and her seminal work *A Cyborg Manifesto* (1985), which will be discussed more thoroughly in Chapter 2. Explained briefly, what Haraway proposes is an overhaul of many masculine-capitalist-modernist categories that, as she argues, have never really made sense. Such categories served powerful groups (spoiler alert—mostly old white men) to establish their position in various fields such as culture, economy and politics. Some of these categories are what it means to be human, animal, and machine, but there is an important category she mentions briefly that is central to the three stories examined in this book—the boundary between private and public. This boundary will be explored in all the three stories examined in this book when it comes to the way media companies redraw spaces, bodies and time.

Three stories were chosen to examine the way that ‘deviant’ media categories are (re)produced in different media, times, and territories. Using stories from different time periods, *Media Distortions* aims to amplify that producing illegitimate categories in media is not a new thing. This is important because many scholars tend to point to processes that happen in one period related to a particular medium and present them as novel, without considering that similar strategies were deployed in the past. I began this research with the initial intention of exploring spam. However, the deeper I dug, the more I realized that spam is just the contemporary name that this deviant media category has received on the internet. So, I kept digging.

Understanding the fluidity of deviant media categories allows us to seek beyond the medium-specific characteristics and gain a better and critical

understanding of how historical, cultural and political processes have been influencing the way they have received their boundaries, their current configurations. This matters because media has a time span, and with the internet it seems to get shorter. Two decades ago, media scholars focused on Netscape, a decade ago, they focused on Myspace. If you ask people about these companies today they would probably not know that they existed. These days, it is popular to conduct research on Facebook, Twitter and Instagram, as well as on companies such as Google or Microsoft. Some of these companies may make it to the next decade, but some will not. So how do we make sense from our research and the stories that they tell in this fast rhythm turnaround?

In a blog post about the problems new media scholars encounter when the objects of their research become obsolete by the time they manage to get it published, Jonathan Sterne argues that this has been a dilemma media scholars have long been facing. Sterne gives the examples of Stuart Hall's *Encoding/Decoding* and Pierre Bourdieu's *Distinction*, works which were dealing with examples that fitted that time but nevertheless remain canonical texts for media studies. This is because, "the ideas in them transcend the examples, and even where the conclusions no longer obtain, the questions they ask might be useful for students to ask today" (Sterne, 2015). Some of the stories and examples you will read in this book might be slightly outdated by the time you read them. But the idea that *Media Distortions* aims to put forward is why and how specific media categories become 'deviant'? And this question will resonate as long as we have media technologies and the human race is not destroyed. In the following chapters I will focus on the context of three deviant media stories, on their specific temporal, cultural and technical considerations, in order to understand how media power works in each of these situations.

Three Distortion Stories

Media Distortions explores three stories in three different time periods: the 1940s, 2000s, and 2008 and after. The periods in each of the stories are marked by huge transitions in mass communications technologies and practices, political turbulence (WW2 and various uprising 'springs' of 2011 onwards) and economic crises (the 1930s Great Depression, the 2000–1 dot-com bubble burst, and the 2007–8 economic crisis). The transitions between the second and third periods are less dispersed, but as time progresses the evolution of media accelerates as well.⁴ The second and third decades of the internet are different in many ways, and the

evolution of this medium and the multiple media it consists mutate more rapidly than previous media.

These structural changes forced a re-evaluation and adjustment of the market and introduced different power relations that required new conditions. Michel Foucault points to such a possible direction when analysing power relations by saying that such “analysis of mechanisms of power may also join up with the history of economic transformation” (2007: 2). A new or different ordering of media technologies in each of these periods introduced new business models, re-organization and measurement of populations (their profiles, behaviors and preferences) and the territories in which they operate.

These turmoils, introduced a re-configuration of what it means to be human, worker, consumer, and citizen. The new rhythm introduced new power relations that changed the way all these roles have been ordered, performed, expressed, and understood within different territories. These new formations have also influenced governments, corporations and law, and the way all of them are entangled and accountable for one another in a recursive, complex and asymmetric manner. This kind of excavation procedure has also been deployed by Lisa Gitelman (2006) and Bernhard Rieder (2012), both of whom focus on two turning points, one in the past and one on the current configuration of the internet. Gitelman explains the rationale behind focusing on two stories from different periods:

I offer two case studies in order to benefit from contrast and comparison, not to refine one at the expense of the other. The chronological gap between them has helped me keep ‘one eye focused on historical variability and the other on [elements of] epistemological constancy’ that underwrite the humanities still, and that like all protocols, can be difficult to see without seeking or contriving some penumbra of discontinuity, such as the joint discontinuousness of time frames and newness of new media rendered in these pages. (Gitelman, 2006: 12)

By choosing three periods to conduct my excavation, I intend to, as Gitelman argues, draw epistemological and ontological connections that correspond with one another. Focusing on three periods will also allow me to show the way deviant media categories have been tools that epitomize media power relations in each era. Each period is characterized by a different approach to the way media and their architecture are configured and theorized. Each story focuses mainly on media companies, meaning that, I discuss their negotiations, conflicts and collaborations with local authorities (such as Bell Telephone with New York City in Chapter 3), regional authorities (like the digital advertising associations with the European Union in Chapter 4) and global authorities (such as Facebook with other global

players in Chapter 5). The power struggles of media companies in that sense is always historically located, relational, and conflicted with more traditional powers such as states. While media corporations still have to establish and fight for their legitimacy and authority, they gradually hold a stronger position in constructing power relations.

Media Distortions reveals the natural and taken-for-granted understanding of activities that have been categorized as a disturbance in communication systems. In this way, spam and noise also relate to how bodies are (re)configured through media. But how do different practitioners define, construct, control and manage behaviors? *Media Distortions*' main argument is that media companies in different periods have been using processed listening and rhythmmedia as part of seven sonic epistemological strategies to (re)produce subjects and territories. The first three strategies are associated with processed listening: **new experts**, **licensing** and **measurement**; the next four strategies are related to rhythmmedia: **training of the body**, **restructuring territories**, **filtering** and **de-politicizing**. Through the three stories, I will illustrate how these strategies have been deployed in different ways and degrees to show how power is put into action, as Foucault would phrase it (1982: 788). I will demonstrate how such power came into action by restructuring mediated territories and training people to become subjects. These procedures will be questioned and re-told in a way that should reveal how we reach our 'common sense' perceptions of deviant categories, and the various motives and factors involved in their creation.

Structure of the Book

Chapter 2 synthesizes transdisciplinary approaches such as media theory, feminist technoscience, sound studies, and software studies into a new composition. It introduces two new concepts for the analysis of media power—*processed listening* and *rhythmmedia*. These concepts entail two interrelated stages: first, how media practitioners listen to people's behavior in a continuous process to create a dynamic database. This knowledge is then spatially and temporally (re)ordered with specific rhythms, using a favoured rhythmmedia to exclude, minimize or eliminate the noise. The outcome of these strategies is the production of subjects who behave in an efficient and economically desired way through media. In this way, I show the theoretical inspirations for this research and how they are woven, while making selective choices and adaptations into the unique approach this research takes.

Chapter 3 focuses on the biggest media company of the early 20th century—Bell Telephone Company and how they produced the media category of noise. Measuring and deciding what types of behaviors should be categorized as noise enabled Bell to remove anything that could harm their business. The chapter focuses on two examples that show how they enacted power by categorizing actions as noise: The first event goes back to the 1930s and the Noise Abatement Commission (NAC), which collaborated with Bell to create a map to spot problematic noisy groups of people and practices. The main goal was to turn various spaces across New York City towards commerce-orientated activities. But to do that, Bell had to define the people and behaviors that interfered with that goal as noisy. These included immigrants who conducted street commerce, the Black community in Harlem who organized unauthorised house parties, and also union protests in Union Square.

The second event focuses on the 1940s and the way Bell needed to categorize behaviors that jeopardize their telephone service and apparatus as noise. Here the focus is on the telephone operators' training program, called *A Design for Living*. Since the operators embodied the telephone it was essential to train them to avoid noisy behaviors. Training their bodies was meant to turn the telephone operators into efficient and fast processing machines. The chapter shows how the unwanted media category was developed by Bell to encompass people and practices that interfered with the smooth functioning of New York City and the telephone system.

Chapter 4 moves to the dot-com bubble crash around the early 2000s and shows how the digital advertising industry produced the media category of spam. The main objective here was to legitimize specific unsolicited bulk communication that was constructed as essential for funding the internet in the shape of web-cookies, and to illegitimize similar practices that were constructed as harming and burdening the infrastructure, which is called 'spam'. By lobbying EU legislators and the Internet Engineering Task Force (IETF), the digital advertising industry and tech companies standardized the category of spam around any 'problematic' behavior threatening their business. This required configuring spaces and people on the internet. First, they created a false distinction between private and public spaces online; categorizing spam as unsolicited communication in private space while web-cookies were categorized as wanted communication in public space. Second, people were (re)produced as data subjects by standardizing the way their behavior was measured, giving them a feeling of control while doing the opposite, and finally educating users to maintain their safety.

Here the argument is that spam operates as a regulatory tool applied to any type of behavior that can interfere with the functioning of e-commerce. These were actions that helped to stabilize and institutionalize EU e-commerce and its associated practices—each actor had to learn its role in the newly created territory and the architecture in which they live.

Chapter 5 focuses on exploring the way Facebook, as an example of the most dominant contemporary media in the western world, (re)produces people into its own meaning of sociality through four filtering mechanisms. It shows Facebook's strategies through the last decade to define, construct and manage deviant behaviors to reduce and eliminate them from the platform. Facebook enacts its power by engineering the social through four filtering mechanisms: architecture, algorithms, hidden workers and their users—all trained to behave in the way Facebook configures as sociality. The two non-human filtering machines show how specific features of the architecture and algorithms harmonize people's behavior and notion of time and space. The two human filtering mechanisms show how both its employees and users are trained to work by doing repetitive actions meant to tune the algorithms. These filters create a database that includes all knowledge about people inside *and* outside its platform, and then renders only what it considers to be 'social' as possible options of living.

Chapter 6 weaves all the stories together and shows what they can tell us about media power. It shows that *processed listening* was conducted to produce a dynamic database, and how power is enacted in each of the stages of measuring, categorizing, recording and archiving behaviors. This is an ongoing process which occurs in multiple spaces because to monetize the database, it needs to be as large and updated as possible. At the same time, *rhythmmedia* is also deployed to reconfigure anything that interferes, harms or burdens media companies' business as deviant, noise or spam. Each story tells us about stages in reordering media and communication in a way that promotes a rhythm that increases value; filtering out advertising practices that do not suit the dominant companies; producing specific temporalities that create more value; preventing political gatherings from being held by de-politicizing them; and, importantly, reproducing people into particular subjects by training their bodies with repetitious actions.

Each chapter chronologically comes one after the other and adds more listening capacities and accelerated rhythmic multi-layered communication channels. These listening capacities enable media companies to know people and their behaviors by measuring them with particular tools and standardized units that enable them to be (re)produced into monetizable data subjects that can be easily exchanged. This creates a power relation whereby people and their

behavior are measured in different territories, but also in different temporalities, to produce subjects that can be commodified and sold, without their knowledge or consent.

As the three stories show, with Facebook, there is a return to the centralized monopoly model that Bell orchestrated, in terms of control over the rhythmmedia, the measuring tools and the database of people. Facebook developed the digital advertising industry's metric standards, while delegating controlled listening capacities to the diversity of actors that participate in the territory. With its social plugins, which are its own cookies and pixels, it opened multi-layered communication channels that transform Facebook into the central node through which the filtered data comes to and from its territory. The evolution of the communication model is, then, more communication channels that are now centred around one company with its own rhythm.

Importantly, I show the development of Bell's telephone operators as an integral part of the communication channel that also functioned as filters, and how that evolved into the European Commission's internet education for citizens, and then Facebook's training of its users. It shows how people are produced into several data subjects that need to be taught through training programs and/or territory design. These subjects include: the sender and receiver of messages, the message itself, the communication channel and, most importantly, the filter. I also point to the differences between these training programs in each period while flagging the specific conditions that influence each unwanted media category and its manifestation. Finally, I outline how we can further develop the notions of sociality and software that I have presented. Now, as Beastie Boys say – "Make some noise if you're with me".

Notes

1. USENET is a global discussion system conducted on computers, started around the year 1980.
2. However, it is important to note that I by no means equate them. Some scholars, for example, the psychologist Robert Epstein (2016), suggest that the metaphor of information processing is inaccurate in explaining the two phenomena. I acknowledge the fact that humans process things in different ways, which include factors such as the senses and emotions, and can never be conducted as part of a computer's processes. Nevertheless, I still see this metaphor as a useful one to work with, as, with most metaphors, it does not create a symmetrical equation. In fact, precisely because,

- as Epstein argues, each metaphor of the human brain represents the 'zeitgeist', it is actually a conceptual tool that epitomises contemporary thought on a particular topic.
3. I distinguish these notions and other similar approaches such as object-orientated ontology or Whitehead's process-relational philosophy as they mainly talk about object, material or not, whereas I talk about categories that can be objects but also practices, behaviors and subjects.
 4. As David Beer argues, "It would seem that over the last 20 years there has been some agreement that social life has been accelerating, especially in association with the integration of new media forms" (2017: 23).

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Orchestrating Media Power through Sound

Before we tune into the three distortion stories, I want to take you through this book's soundtrack elements. Like turntablists 2ManyDJs or DJ Shadow mix different segments of music into a sound experience; this chapter mixes different theoretical approaches, while emphasizing why sound, rather than vision, is a more productive way to examine media power. *Media Distortions* fuses together media theory, science and technology studies, internet governance, media history, software studies, and importantly—sound studies. Like DJs, I do not use these theories in a random way, but carefully pick which concepts, scholars and research guide this transdisciplinary approach, cut and paste them into a new piece by amplifying the relevant issues and pointing out what I do differently.

The chapter begins with the two main theoretical approaches that are mixed together. The first is Michel Foucault's work on three modes of governmentality; as characteristics of how power relations have been enacted by the production of knowledge through media. These modes of governmentality show how deviant media categories have been used in different time periods to (re)configure people and territories. The second theoretical approach fuses Foucault's approach to power with sound studies. I use a sound studies theoretical approach to develop two complementary concepts that will guide us throughout the book—*processed*

listening and *rhythmmedia*—as ways to think and analyze knowledge production through media.

After establishing the theoretical foundations, the chapter moves to two other clusters of scholarly work; the first examines how mediated territories are (re)arranged to influence bodies and behaviors; the second focuses on how bodies and behaviors are (re)configured through media. In the first section, key concepts from fields such as (digital) geography, media law, and software studies are mixed together to show how territories have been used to shape the people who operate in them. In the second part, fields such as feminist technoscience and digital anomalies, the former challenges the categories of human and machine and the latter examines spam, computer viruses and bots. This orchestration is meant to amplify all the elements necessary to explore deviant media. Let's put the needle on the record and play this tune, shall we?

Re-processing Foucault

Media Distortions is about power. And perhaps one of the most prominent theories about power is Michel Foucault's modes of governmentality. In an important essay explaining why we should study power, Foucault argues that his work is about creating histories that construct people as specific subjects, or, as he calls it, "studying the objectivising of the subject" (1982: 778). Throughout his career, Foucault examined how people became specific subjects. He examined deviant bodies; such as the mad, the sick, and the criminal—but his most extensive project was on the sexual subject. In his work, Foucault examines the instruments that make it possible to shape people as objects, by developing specific institutions, laws, rationalities, training of the body, architectures, measurements, and vocabularies. All these mechanisms intervene in people's bodies and behaviors. They create a material territory which shapes how people can behave, and consequently the way people understand themselves, their surroundings and society.

In all of these examples, Foucault shows how specific practitioners (doctors, judges, psychiatrists) were able to make truth claims which delineated between what was considered normal and what was considered deviant. His work shows how powerful it is in producing people into these subjects. Similarly, I aim to create a history of the mediated subject. Software-mediated territories are unique in this sense because they are not 'just' the spaces where such subjects are produced (like the clinic or prison), but they function as bodies themselves. But I am jumping ahead, let's first understand how Foucault fits in this distorted story.

Throughout his career, Michel Foucault developed his theory of power-knowledge through three modes of governmentality: sovereign, discipline and especially his latest work on biopolitics. The proliferation of the concepts of *biopower* and *biopolitics* emerged from Foucault's lectures at the Collège de France¹ in 1977–8, titled *Security, Territory, Population*, and the subsequent lectures in 1978–9, titled *The Birth of Biopolitics*.² Nevertheless, it is important to note that the concept of *biopower*, or the philosophy of life, has more than a century of history (Lemke, 2011: 9). These transformative moments in the understanding of power relations are the main focus of Foucault's work on modes of governmentality, which ask *how* power is enacted on people both as individuals and as a population. These theories were not detached from Foucault's everyday life, he was a queer political activist protesting against the institutions he was writing about, such as the prison system (he co-founded the Groupe d'Information sur les Prisons in 1971) and psychiatry. Questioning the 'natural' and rational way deviant behaviors were constructed in different fields, Foucault reveals the history and strategies that created the discourses of the abnormal. Similarly, *Media Distortions* focuses on how people are configured and understood through media, and what strategies have been deployed to categorize them as normal or deviant.

Broadly speaking, governmentality is the way power is enacted over a population that has become a main objective of knowledge production by the state. It entails a specific composition of things to be governed, which include territories and population. To govern, as Foucault argues, is to structure possible behaviors for people (through various instruments such as architecture, laws, measurements of the body), which in turn, produce them as subjects. The three modes of governmentality historically arrived one after the other, but they do not disappear, and residues of the previous forms of power persist. As Foucault argues, regarding what would develop as biopower:

This technology of power does not exclude the former, does not exclude disciplinary technology, but it does dovetail into it, integrate it, modify it to some extent, and above all, use it by sort of infiltrating it, embedding itself in existing disciplinary techniques. (Foucault, 2003: 242)

The main development that Foucault points to is the one from top-down sovereign power, into biopolitics, which entails more complex entanglements of power that emerge and occur from below. Importantly, power does not inherently exist in people, spaces, or government institutions; instead, power for Foucault (1982) only exists when it is put into action; actions deployed on actions in the present or future. This means that power relations are created in a *process* that depends

on the rhythms and orderings of different components—it is about conducting rhythmmedia (more on rhythmmedia below). Power is enacted on people's actions and things in ongoing negotiations of force, and enabling or restricting possible fields of actions and hence living.

Foucault takes the city as a paragon example of what he calls circulation—the way things and their relations—products, people's activities, and the architecture in which they operate—are arranged and managed. Circulation is a constant movement without much friction. Rhythms, on the other hand, allow us to think about these movements as fractured, distorted, and inconsistent. Rhythms enable us to examine multiplicities of things, people, spaces, and times. This is why 'rhythmmedia' is a more useful term than circulation, as it allows us to describe myriad processes whereby things and people relate to each other in a specific architecture, co-produced in different temporalities and frictions.

Power in this book is the ability of media companies to produce options of living through media by shaping, managing, and controlling (software-) mediated territory. It does not assign magical power to media technologies, infrastructure or standards, quite the contrary—I aim to reveal the struggles and negotiations behind them. For Foucault, power is enacted on people's actions through a re-organization of the city's architecture. But instead of sewers, sidewalks, buildings, and rivers, in *Media Distortions* we have protocols, code, software, and algorithms. These computational building blocks create the material architecture where relations between individuals, groups and objects are temporally and spatially (re) produced and governed. Importantly, they create a field of possibilities of what are the normal and abnormal behaviors in these mediated territories.

Foucault relates sovereign power to a ruler who exerts power over his land and the people within the borders of this land. When it comes to discipline, power is exercised through institutions that have practitioners who operate in specially designed architectures such as schools, clinics (Foucault, 1973) and prisons (Foucault, 1975) and train individuals' bodies to return to a normative state. With discipline we are dealing with confined spaces, their specially designed architecture constructs the power relations and the way people understand how they need to behave. As Foucault argues about disciplinary space:

Its aim was to establish presences and absences, to know where and how to locate individuals, to set up useful communications, to interrupt others, to be able at each moment to supervise the conduct, of each individual, to assess it, to judge it, to calculate its qualities or merits. It was a procedure, therefore, aimed at knowing, mastering and using. Discipline organizes an analytical space. (Foucault, 1975: 143)

These territories, then, are designed to know people by measuring, managing, supervising, but also shaping and influencing people. These architectures structure asymmetric power relations governed by rank, whereby some actors (e.g., doctors or prison guards) can listen and thereby know more about people. Therefore, a special kind of power-knowledge axis is created; a complex ensemble of architecture which orchestrates people, objects and their relations into a specific mix. As I will show in each distortion story, the rhythm that conducts these material architecture compositions in a process of transformation (re)orders how they can act, relate to one another, and understand their surroundings.

Foucault's later work on biopolitics focuses on the state and police as a spatial intervention mechanism of cities. In this mode of governmentality, the space goes beyond the confinement of hospitals and prisons. Although Foucault uses the word 'technology', he does not mean it in the literal way but rather as a tool, and his work never focuses directly on media. This is one gap and shortcoming in Foucault's work that this book aims to address. *Media Distortions* focuses on media companies and their practitioners rather than states and their institutions. That is not to say that states do not enact power, but the aim is to shift the attention to media companies and how they destabilize power relations.

In today's landscape, state power seems marginal compared with the prominence of the five big media companies Facebook, Amazon, Microsoft, Apple, and Google. These companies have the ability to shape, manage and control the way we engage with media, but also how we understand, think and importantly—act. In 2018, the main focus was on Facebook's alleged involvement in the U.S. 2016 Election and various Russian interventions brought to light with the Cambridge Analytica story. This resulted in a unique event where Facebook's founder and CEO Mark Zuckerberg was giving two testimonies in front of the United States Congress in April 2018. This attention to Facebook's problematic data practices was a rare occasion where big media companies were legally required to reveal their business model. Yet the main discussions in the mainstream media were still around politics with the big P—governments, elections and parties. Zuckerberg was not invited to congress in June 2014 after the controversial emotion experiment was revealed, whereby Facebook (Meyer, 2014) tweaked its algorithms in 2012 for almost a million users showing either positive or negative content to see how that influences people's engagement on the platform. Zuckerberg was also not invited after earlier in incidents such as its 2007 Beacon which allowed companies to track users purchases and notify their friends about it on their newsfeed, with the hopes that it will have a 'word of mouth' marketing effect. People's everyday lives were never deemed as important as elections.

Media Distortions, on the other hand, does not focus on what happens in parliaments and governments in relation to politics with a big P. Rather, I focus on politics with a small p while arguing that this kind of politics, of the everyday life, the way we understand ourselves, how we can act and interact with people, how we understand the platforms we engage with, and what we can do in them—is more important. Politics with a big P is part of this entanglement, but it is only *one* aspect of how we form our subjectivities and our relations with others. Others include how we form our sexuality, feelings, friendships, education, political views, culture taste, preferences in food, financial behavior, fitness, and more. It is what makes us, *us*.

Media companies' increasing role in people's lives has been accelerated, especially since the introduction of digital media, scholars associate with and theorize from Claude Shannon's information theory in 1948 (more on Shannon in the next chapter). Media are both the tools and territories where people perform their everyday life, where people express themselves, connect with their friends, family, partners, government, health system, municipality, and work. Media is where people are linked, it is where they experience their everyday lives. As Foucault argues, governmentality is enacted on people and "their relations, their links ... their relation to that other kind of things, customs, habits, ways of acting, and thinking" (1991: 93). 'Linking' things is not a neutral process, it involves decisions on how, where, and why specific things are linked, while others are not.

In the following chapters I focus on the politics of making these links and how they make certain behaviors possible while filtering out others. These links are constantly mutating and influenced by code, protocol, and algorithms, but also by the companies' decisions, engineers, the people who operate them (in the front- and back-end), people, bots, and data centers. At the same time, people and their relations to other people and objects are conducted through media, to provide possibilities of being, expressing, communicating, working, protesting and, ultimately, living. Importantly, such links and ordering also limit, filter, exclude, remove the possibilities of non-living: of the noise, deviant, spam, junk, and illegitimate behaviors or people.

Now that we understand how biopolitics involves much bigger territories and aspects of life, let's tune into what Foucault meant by it. With biopolitics Foucault (2008) introduces a framework whereby new models of ruling come to life, to control life, which he calls the *arts of government*. In this new form of governmentality, Foucault expands the scope of power relations by focusing on whole populations, rather than a select few individuals within specific spaces.

Governing a population entails a myriad of meanings; it includes a continuous and active control over people's bodies, movements, souls, behaviors and desires. It must be taught and understood on daily conduct, which is then supervised, observed, managed, and directed by *raison d'état* (the reason of the state). This training is also conducted by the citizens themselves in a process of self-regulation and observation deployed on themselves and their close surroundings. The interest in 'population' as an object of intervention is the focus on relations between people, and how the state can enact power on their actions and links. The 'reason of the state' is thus a practice that presents itself as a rationalized given and, at the same time, is in a constant process of construction.

In focusing on whole populations, Foucault's theories undergo a drastic conceptual change. With discipline, the focus is on people as individuals, prohibiting and limiting their actions with specific rules and regulations that tell them what they can and cannot do. In biopolitics, states have started to do the exact opposite—allowing people to do whatever they want within the specially-designed architecture provided for them—a prescribed freedom. As biopolitics is the politics of life, it also involves the politics of the non-life; how do specific media architectures enable or disable non-life? How does something or someone become categorized as something that is not 'life', and how does that categorization deviate from the definition of life? This question is at the heart of *Media Distortions*.

If deviant categories are more clearly defined in discipline, in biopolitics, unwanted categories are much more fluid, flexible, and ambiguous. Contrary to discipline, whereby the normal and the abnormal are clearly defined and set as oppositional; with biopolitics, such rigidity becomes more flexible. As *Media Distortions* shows, a lack of distinct and clear definitions also holds power. Whereas Foucault and most media and communications scholars theorize power relations through vision and (in)visibility, this book uses sound. Let's listen closely to understand how sound can be more useful in the case of media power.

Sound as a Conceptual Framework

Whenever I talk about my work and mention sound studies people immediately think about music. This is an understandable assumption, but an incorrect one. Sound studies is a relatively new field that takes sound and its associated practices and technologies as its entry and departure points. My first encounter with the field was in summer 2014 at the second European Sound Studies Association (ESSA)

conference in Copenhagen, Denmark, where I presented parts of Chapter 3 in this book. The conference attracted academics from a wide variety of fields such as history, science and technology studies (STS), cultural studies, media, music, art, archaeology, and sensory studies. It was an exciting conference that encouraged mixing the more established fields to challenge such disciplinary boundaries and put sound at the center of thought and analysis.

Listening beyond the automatic association with music, sound studies explores sonic practices of value (Ihde, 1976; Attali, 1985; Bijsterveld, 2008), different ability such as deafness (Sterne, 2003; Mills, 2011a, 2013), technologies (Mills, 2011b), formats (Sterne, 2006, 2012a), art (Kahn, 1999) and cultures (Birdsall, 2012; Thompson, 2004). These academic works show how sound and its practices (e.g. voicing, vibrating, listening, silence, and noise) are important for understanding the way social and media power relations are played. Earlier research has been published on sound and listening-related issues, but was not categorized under the sound studies umbrella. Such important work comes from fields such as acoustic ecology, especially the influential work of Murray Schafer (1977), who coined the term *soundscape* to describe sonic environments. In 2012, sound studies welcomed two important collections: *The Oxford Handbook of Sound Studies* (Pinch and Bijsterveld, 2012) and *The Sound Studies Reader*, edited by Sterne (2012b). Sterne positions the field as so:

Sound Studies is a name for the interdisciplinary ferment in the human sciences that takes sound as its analytical point of departure or arrival. By analysing both sonic practices and the discourses and institutions that describe, it re-describes what sound does in the human world, and what humans do in the sonic world ... It reaches registers, moments and spaces, and it thinks across disciplines and traditions, some that have long considered sound, and some that have not done so until more recently. (Sterne, 2012b: 2)

Importantly, sound is a good conceptual framework to work with when examining media because of the way it challenges boundaries of space. Contrary to vision, whereby the practice of seeing depends on your position, sound is not linear, static, or homogenous. As Carolyn Birdsall argues, sound “does not respect borders between public and private life, and travels beyond the field of vision. In doing so, sounds are able to appear in the auditory imagination, even if their source cannot be seen” (2007: 63). Unlike vision, sound has the ability to move between public and private spaces while filling them with its presence. Its textured vibrations permeates boundaries, and produce multiplicities of sounds, which could be fractured, rhythmic, and dynamic. As Kate Lacey (2011) argues,

sound has rich qualities of transmission, such as vibrations, reverberation, echo, and resonance, and they shape objects in space through their inter-relationships. In doing so, sound practices can be better used in the ongoing practice of reordering and structuring the boundaries of multiplicities of bodies, communication channels, objects, and spaces.

Sound concepts offer powerful affordances to think and analyze with. In this way, sound is useful for redrawing boundaries of public and private spaces. Additionally, sound is useful for analyzing bodies, which are demarcated by using media technologies' architecture and tools. Instead of conceptualizing media's power in selecting, ordering, classifying, ranking, and filtering information and behaviors by using vision (Crary, 1992) and structuring (in)visibilities (Bucher, 2012a), I argue that it is more productive to use sound, specifically listening. In the next section I explain the concept of *processed listening*, and illustrate how it will be used throughout the stories.

Processed Listening: Producing Knowledge in Mediated Spaces

Both hearing and listening are body activities that are temporally, spatially, culturally and scientifically constructed. People's abilities and limitations of hearing and listening have been used to construct normative assumptions about what it means to be healthy and able. Hearing is the ability or limits of the ear, a spherical and immersive experience that is temporal, subjective and affective (Sterne, 2015). As Sterne argues, "[e]verything that is known about hearing in its natural state is a result of the interactions between ears and sound technologies" (2015: 69). Our environment, culture and media structure and condition people to hear things in certain ways.

Listening, on the other hand, is different, though not necessarily contradictory, to hearing. Listening involves intention, selection, and attention. There is a calculated effort to focus on a sound element, which could also be silent. Listening puts hearing to work, it moves people to make a bodily adjustment to be more perceptive of a specific sound element they are searching for. Listening always involves hearing, but hearing does not necessarily involve listening. The practice of listening is about making decisions about what to focus on, to make a distinction. Listening is the act of separation between a stream of sounds and tuning into an element that receives a category of its own. For example, when some men decide to mansplain at me on Twitter, I hear them but I make a decision not to listen to them. I mute them.

As Tom Rice (2015) argues, types of listening, its terminology and acoustic agency, have been developed alongside sound technologies. For him, listening “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” (Rice, 2015: 99). Therefore, ways of listening are shaped by technologies’ affordances and design; and, to increase the scale, things, people, and data that practitioners can listen to. I focus on practitioners who are owners, managers, and controllers of media, examining the way they produce knowledge through sonic epistemological practices (Volmer, 2013), specifically listening. I focus on their attention and deliberation towards specific things, people and behaviors and what they later do with this knowledge. I also focus on the tools they use to listen to things. This includes the way they measure, which units they use, how they categorize and archive this knowledge they produce from listening. These actions involve power, and this power is enabled by different capacities of media technologies and the environments they mediate.

As Lacey (2011) points out, listening has been neglected in media and communication scholarship, although it is a political, embodied, dynamic activity. As she argues, the qualities of listening provide plurality of experiences because they are “better able to accommodate forms of communication—mediated or otherwise—between two *or more* participants” (Lacey, 2011: 14, emphasis in original). Listening, then, is more suitable for multiplicities of actors, objects, spaces, and forms of communication. As I will show, listening enables the *ongoing* monitoring, detection, categorization, recording, and archiving of people and their behaviors in multiple mediated spaces. The more listening capacities media practitioners have, the more they can produce knowledge that can be used to construct power relations.

I use listening as a way for practitioners to produce knowledge through media. Listening as a knowledge production practice has been examined mainly by scholars from the history of science and STS, who focus on the way different practitioners and specialists produce knowledge by deploying modes of listening. STS scholars have been interested in the politics of categories and what are the repercussions of creating them, with Susan Leigh Star and Geoffrey Bowker’s work on classification as a prime example (Bowker and Star, 2000). Knowledge production practitioners who use sound as a way of knowing range from car mechanics who listen to engines and car bodies to detect problems (Krebs, 2012; Bijsterveld and Krebs, 2013), psychoacoustics (auditory perception) (Williams, 1994; Bregman, 1994; Moore, 2003), and doctors who listen to patients’ bodies to determine the health status (Rice, 2010, 2013, 2015). However, there is

very little research that examine the ways media practitioners produce knowledge through listening.

Doctors, for example, produce knowledge by listening to people's bodies, establishing their health condition and what procedures should be undertaken to make them better. In this sense, Foucault's overemphasis on vision in knowledge production, and the way doctors use the gaze to construct power relation presents a partial story of the clinic's discourse. As Rice shows, doctors *learn* how to listen to what he calls "acoustic traces of bodily processes" (2010: 41) through stethoscopes to diagnose the condition of the patient's body. Rice shows how listening is a learnt embodied experience, whereby doctors use tools to enable or enhance their listening abilities. With different devices doctors have a deeper ability to listen to more bodily spaces/layers and produce richer and more accurate data. Therefore, modes of listening are shaped by technologies affordances and design, which increase the scale, things, people and data to which practitioners can listen.

When considering modes of listening, Alexandra Supper and Karin Bijsterveld's (2015) research on sonic skills helped me to develop my sonic epistemological practices approach. Supper and Bijsterveld (2015) argue that practitioners' sonic skills are developed by three types of learned skill: the ability to *use* several modes of listening, the capability to *shift* between them, and to *know* how to use the tools that enable listening. They propose two dimensions of listening practices taxonomies, the *purposes* (why) and the *ways* (how), which are conducted by practitioners from science, technology and medicine to produce knowledge.

Each dimension, as Supper and Bijsterveld (2015) outline, has three taxonomies. In terms of the purpose (the why) of listening, they identify existing modes of listening: *monitory*, which is meant to monitor that everything is operating in a good condition; *diagnostic*, meant to diagnose the specific reason or source of the problem; and *exploratory*, which tries to find new phenomena. In terms of the ways (the how) of listening, they identify existing modes of listening: *analytic*, which focuses on individual components of a sound stream, *synthetic*, which fuses selected elements into a single perception; and develop a new mode called *interactive* which means the ability to focus on different sound sources and switch between different sound elements to create a new one (like the DJs I mentioned above).

In particular, Supper and Bijsterveld argue that practitioners need to develop bodily (positioning of stethoscope) and technical skills (body postures that help to operate the tools) to operate the listening devices, which include "making, recording, storing, and retrieving" (2015: 125). Although Supper and Bijsterveld

(2015) emphasize the significance of knowing how to operate listening tools, they do not address the politics behind developing such tools, the measuring process and their standards. For media practitioners, such tools take center stage as the measurement tools become not only devices for listening but also as the way to experience ways of being, such as computers and digital/datafied environments.

Importantly, Supper and Bijserveld (2015) and other scholars who have been examining modes of listening as knowledge production practices have not considered practitioners who own, manage, work, or fund media.³ Digital listening has been explored by David Karpf (2018), but his definition of it as “the collection and analysis of online behavioral data” is very broad and does not provide explanations to how it is conducted. Karpf has developed the concept in relation to analytic activism, which “converts digital trace data (analytics) into *strategic objects* that organizations rely upon to fashion new interventions in the political arena” (Karpf, 2018). Although digital listening is an interesting approach it mainly focuses on social movement organizations and does not account for each of the steps (collection, analysis and then organization) and their politics. Importantly, it does not account for temporal and spatial considerations involved in these processes. *Media Distortions* addresses precisely these developments of listening capacities, devices, measuring and their standards. But to do that we need a new mode of listening, which I call *processed listening*.

When it comes to media practitioners, the six modes of listening outlined above are not enough to capture the complexity of multiple actors listening to people in different multi-layered media spaces. These modes of listening are also not sufficient to capture how media practitioners listen to people in different time periods and using different tools, in order to create various kinds of knowledge (mainly profiles). One of the main differences here is that the knowledge is constantly being produced in a recursive feedback loop. In the case of digital spaces, bodies and architectures are always in a process of being (re)constructed in multiple temporalities and spaces.

In mediated spaces people’s bodies are rendered differently—they are augmented, can be in several places at the same time, and experience different temporalities. The boundaries between biological and digital bodies are fluid, mutating, negotiated and complicated. When talking about such bodies, it would not be accurate to discuss ‘offline’ and ‘online’ as oppositional. Technoscience feminists have been discussing these false divisions of bodies for decades. Donna Haraway (1985), for example, challenges the boundaries of foundational categories such as human and machine. Haraway shows our understanding of these categories, in particular the division between physical and material versus non-physical and

immaterial, is much more fluid and flexible than previously argued. As she argues, bodies “are not born; they are made” (Haraway, 1999: 207). For example, if I sit next to my mobile phone and people interact with the tweet I made a minute ago on Twitter (my user is @Elinor_Carmi in case you really want to tweet to me) and I talk to my friend who sits next to me about an email I just received, am I ‘on-line’ or ‘offline’? This distinction doesn’t make much sense as people slide between mediated spaces in different capacities all the time.

Feminist technoscientists such as Haraway (1997), Rosi Braidotti (2002) and Karen Barad (2003) have also been developing ‘processed-based’ philosophies.⁴ They do not necessarily use the term ‘process’, but rather ‘becoming’ or ‘nomadic’ (Braidotti, 2002), and ‘performativity’ or ‘agential realism’ (Barad, 2003). Although each scholar provides a rich and different understanding of their interpretation of ‘process’, they broadly mean the rejection of a fixity of ontologies and materialities. These scholars reject essentialism and fixity instead arguing for processes which are co-produced and relational, enacted and performed by humans and the non-human. Their contributions have inspired my work which takes a different direction by using listening as a way of knowing.

Karen Barad, for example, uses the example of Niels Bohr’s quantum physics to explain how matter comes to matter. As Barad argues, western thought believes that beings exist as individuals who have clearly bounded attributes which are independent from their representation. Challenging such inherent characteristics of representation, she suggests performativity of discursive practices (rather than words) calling into question categories such as human and non-human. She examines the practices that make a distinction, that destabilize the creation of boundaries between phenomena (relations rather than things/objects) as distinct categories. For her, there is an intra-action, a performativity of matters, which means that “*apparatuses are dynamic (re)configurings of the world, specific agential practices/intra-actions⁵/performances through which specific exclusionary boundaries are enacted*” (Barad, 2003: 816, emphasis in original). Coming from the sciences, Barad emphasizes the process of knowledge production while highlighting the politics of measurement, positioning and the lack of inherent boundaries and properties of the phenomena that is produced—it is all relational and performative.

However, Barad (2003) does not provide an account of this ‘dynamic’ force of (re)configurations.⁶ Although Barad and other feminist technoscientists argue for process theories, they do not fully develop the temporal and spatial considerations of the *process* itself, or as Barad calls it the ‘agential cut’ that enacts a local and specific intra-action. What are the politics behind making this ‘agential cut’ in specific times and spaces? Moreover, although Barad (2003) challenges western

cultural notions of representationalism, she and other feminist technoscientists use the traditional and conventional western ways of knowing—vision and invisibilities. Therefore, although their arguments about the body *and* process have been important for developing the theoretical framework for this book, there is a need for further tuning.

Following these approaches, I propose a new mode of listening (that combines the two dimensions of the how *and* why), which I call *processed listening*. This mode of listening contributes to sound studies, media studies, science and technology studies, and other fields in which practitioners produce knowledge in different spaces and times (e.g. disc jockeys). *Processed listening* is a mode of listening whereby practitioners from different professions and interests (individuals, organizations, or governments) listen (monitor, detect, measure, categorize and record), to different sources (material, digital bodies, technologies, spaces), by using several tools (manual or automatic), in different times, to produce different kinds of knowledge for similar purposes. By conducting processed listening specific bodies are made and remade in a continuous process; subjects are produced and reproduced.

When it comes to listening to and through media, the different stages of listening are not as distinct in terms of the time *and* space in which they are being conducted. To begin with, listening can be conducted by several actors for similar purposes. So unlike the single doctor, car mechanic, or physician, mediated spaces enable multiple actors to take part in the listening process. Practitioners who listen through media do not have the same listening capabilities, and the more you can listen to, the more power you can enact. Supper and Bijsterveld (2015) also focus on listening to a single body, whether human or machine, but even if they talk about different sounds the body makes, it is still a single unit. When it comes to mediated subjects, however, while listening is conducted on individual bodies, they are, at the same time, listened to as a population or groups of classification/segments. Listening is conducted on a micro and macro level; both on the individual body and bodies as populations/audiences.

Furthermore, Supper and Bijsterveld focus on a particular event, whereby the practitioner conducts the listening, making it temporally and spatially constrained. When I go to the doctor I know there is a beginning and end time to the appointment. In contrast, in this book I show that listening can be done in different times and spaces in a continuous process.

Here, Carolyn Birdsall's (2007) notion of breaking the boundaries of spaces is useful, as *processed listening* is conducted in multi-layered media territories that are co-created by these different actors (human and non-human) and tools. The

more listening capacities an actor has, the more knowledge they can monitor, measure, categorize, record and archive, and, therefore, the more power they have to (re)produce subjects and territories. Foucault mentions similar structures, but, relying on vision, he describes this as ‘hierarchical observation’. According to him, such a structure is “an apparatus in which the techniques that make it possible to see induce effects of power, and in which, conversely, the means of coercion make those on whom they are applied clearly visible” (1975: 170–1). Similarly, the architectures discussed in *Media Distortions* also enable media practitioners to produce the people they listen to through ‘hierarchical listening’.

In particular, when it comes to software-mediated spaces, the devices used to listen to people are also, at the same time, operating as their bodies. Devices producing scientific knowledge have been concerning sociologists, and particularly Actor Network Theory scholars such as Bruno Latour (1987, 2005). Other scholars such as Ruppert et al., for example, argue that “digital devices and the data they generate are both the *material* of social lives and form part of many of the apparatuses for *knowing* those lives” (2013: 26, emphasis in original). This will be further discussed in Chapter 4, where browsers have several functions: they provide tools for measuring people, they operate as people’s bodies and they constitute the territory in which people navigate.

Processed listening is a useful theoretical concept as it examines how multiple actors listen to bodies with different tools and for similar purposes. These ‘purposes’ are to know people and their relations in order to produce them as subjects/profiles/products that can be monetized, and then (re)arrange them and the architecture accordingly. In this context, the internet reorders the body’s boundaries, and opens it to public (listening) inspection by foreign and sometimes unknown actors.⁷ This introduces new power relations that are at the heart of this book. The way all these elements are ordered by repetitions is conceptualized through *rhythmedia* and will be discussed now.

Rhythmedia, or Orchestrating Sociality

When I first scripted it in early previews, I was describing this thing that happens to the guinea pig, and this wasn't landing with the audience. And I was doing two or three previews in, and I didn't feel like I'm getting a reaction from them. And Vicki Jones, the director and I, changed the words a bit, changed the rhythm of what I was saying and there was one night where I was saying “OK, we're going to try it with this new rhythm”, and I say what happens to the guinea pig and the entire audience is going like AHHHHA, and I was like AHHHH (Phoebe Waller-Bridge interview at the Late Night with Seth Meyers Show, 20 March 2019)

Ordering sociality with rhythm is not a new thing. It is something that different types of artists and creators do from television shows, theater, and onto stand-up comedians and musicians. Filmmakers for example, do test screenings or *Family and Friends* screenings and test their latest edited version on the audience. Occasionally the audience would receive feedback forms to indicate what they liked, what they would change, what didn't work and other things which didn't quite rhyme well. Using the gathered data, filmmakers will change the plot and potentially the endings of films (which the studios could also have a say in), this is the reason why in DVD versions we get to see 'the director's cut'.

Phoebe Waller-Bridge is the creator of the theater play and television shows *Fleabag* and *Killing Eve*, and as the quote above here shows, she did several preview shows for her *Fleabag* theater show to test how the play works on the crowd. When she did not quite get the reaction she wanted—crowd laughing or gasping—she changed the rhythm. That means changing the order of monologue, tempo of the words, how she moves on stage, and how she interacts with the crowd. Only after she reached the desired rhythm, the one that influenced people's behavior in the way she wanted, she kept it as the winning order of things. I call this practice *rhythmedia*.

Rhythmedia means temporally and spatially ordering the knowledge database produced by *processed listening*. These two concepts are complementary. Ordering and organizing the movement of people and things through media has been discussed through various terms across various disciplines. Science and technology studies scholars, for example, have emphasized the bias in ordering of search engine results, such as Astrid Mager's (2012) emphasis on capitalistic rationale baked into the design of Google search engine. Adding to this economical organization incentive, Safiya Noble's work (2018) shows the racial and gendered discriminations which are engineered into search results such as Google's search engine results. Such accounts show how both human and non-human actors are involved in the practice of ordering and yet do not focus on how exactly the ordering is conducted.

Ordering, sorting, selecting, and presenting information in media is not a new thing. Media scholars tend to describe such (re)ordering as data -stream, -traffic, -flow, and channelling. However, usually these terms are taken-for-granted without exploring the composition of such 'flows' and what stands behind them. Media scholars have shown there are human interventions into the algorithmic ordering in the shape of commercial content moderators (Roberts, 2016; Mayers-West, 2017; Gillespie, 2018a) whose actions are concealed from the average users. Such interventions in ordering of content and relations have been conducted by

hidden workers, who rate (Bilić, 2016), sort, remove, filter, delete, and suspend people and data. The result of their work - people's experience on platforms - has been explained by such platforms as the 'natural' ordering of algorithms.

As Tarleton Gillespie accurately argues—moderation is a commodity, it is “part of how platforms shape user participation into a deliverable experience” (Gillespie, 2018b). Although they focus on how different procedures affect users (e.g. the #FreeTheNipple campaign on women's subjectivity), they do not dive deeper to the temporal consideration of such moderation actions. Why do people engage with things in particular times and spaces? How does that affect people's mediated experience?

Examining these notions from a broader perspective, José van Dijck and Thomas Poell developed Altheide and Snow's *mass media logic* concept (1979) and adapted it to *social media logic*. While the earlier concept dealt with the way mass media have presented their ordering as natural, the newer concept focuses on the factors that influence these newer media. Social media logic has four main elements—programmability, popularity, connectivity, and datafication. The two most relevant elements here are *programmability* which is how these platform “influence the flow of communication and information activated by such a platform” (van Dijck and Poell, 2013). And *connectivity* which is the way these platforms “always mediates users' activities and defines how connections are taking shape” (ibid). While they point to important developments, van Dijck and Poell still use concepts without critically questioning how data flows or ‘un-flows’, how do platforms decide what *are* connections and *when* do they connect or disconnect?

This is the rhythm of our lives. Few media scholars have used ‘rhythm’ as a guiding concept. The digital sociologists Beverly Skeggs and Simon Yuill (2016) point to the tendency of scholars to conduct a static analysis of the social relations that the platform's architecture produces. Similar to the approach I have developed, they also use Henri Lefebvre's rhythmanalysis (2004) to understand the relations between different elements as a way to explain what Facebook ‘does’. Although they challenge Facebook's self-description of ‘social network’, they focus on the notion of ‘liveness’ and rhythms of life, and by doing so, they neglect to account for rhythms which are produced as ‘non-life’. In this way, they overlook actions and interactions which are categorized as disturbance and yet still get counted and have value, even if just to be removed an eliminated.

The same issue arises in Esther Weltevrede et al.'s (2014) important criticism of the concept of ‘real-time’. Through a device specific approach, they show how *real-timeness* is “a form of information organization” (Weltevrede et al., 2014: 3),

that is created in specific ways, in a specific ‘pace’. Although they reveal that social media produce different paces, they focus on the ‘liveness’ of pace. But further questions need to be asked about the composition of the ordering; how specific ordering get categorized as legitimate ‘life’ and thus prioritized, while others get categorized as ‘non-life’ and therefore removed and filtered even if they have similar characteristics.

Rhythm is more similar to the way Shintaro Miyazaki defines it in relation to algorithms, or what he calls ‘algorhythm’:⁸ the “elementary movement of matter, bodies and signals, which oscillate in-between the discrete and the continuous, between the symbolic and the real, between digital and analogue” (2012). However, the concept ‘algorhythm’ stays quite opaque when it comes to who conducts such rhythms, and how they are orchestrated. Importantly, as I mentioned above and in the introduction—these ordering processes do not only occur in software mediated territories. Rather, *Media Distortions* aims to examine local ordering procedures which happen in mediated territories, as will be illustrated in Chapter 3 with the telephone in the early 20th century NYC. Tackling these gaps I propose rhythmmedia as a more useful way to examine multi-layered networks analogue or digital.

Rhythmmedia is drawing on two concepts—Henri Lefebvre’s *rhythmanalysis* and Raymond Williams’ *planned flow*. Henri Lefebvre’s (2004) work on rhythm is one of the few interrogations into this concept from a sociological point of view rather than a musical one. Lefebvre examines the relationship between time and space in everyday life. In particular, he conceives these in repetitions of movements of the body, living or not, when it produces pulses, durations, phases and more. It is actually in his previous work on the production of space that Lefebvre (1972) discusses notions of producing objects, subjects and spaces according to temporality. As he argues:

The form of social space is encounter, assembly, simultaneity. But what assembles, or what is assembled? The answer is: everything that there is *in space*, everything that is produced either by nature or by society, either through their co-operation or through their conflicts. Everything: living beings, things, objects, works, signs and symbols. (Lefebvre, 1972: 101)

In the context of this book, ‘everything’ is precisely what is assembled by *processed listening* into a dynamic database. The complementary process to that, then, is *rhythmmedia*, which strategically orders this knowledge in particular times and spaces. Lefebvre (2004) argues that rhythm as an ordering mechanism is far from being natural or spontaneous; there is a project of calculation, of measurement

behind it. In this sense, Lefebvre challenges what seems natural and exposes the calculated strategy to structure and order bodies, things, objects with rational laws.

There are several similarities between Foucault and Lefebvre's work, especially in relation to rhythm. Both Lefebvre and Foucault examine everyday life and how it is conducted in cities. Each in his own way wanted to understand how cities are arranging and producing the people and objects in them and vice versa. The difference is that Foucault calls this process circulation, as he argues, "[w]hat is questioned is the way in which knowledge circulates and functions, its relations to power" (1982: 781). For Foucault, especially in relation to biopolitics, circulation means both the city's structuring and ordering of material architecture conditions such as bridges, roads and public spaces *but also* people and their behaviors. It is "the set of regulations, constraints, and limits, or the facilities and encouragements that will allow the circulation of men and things in the kingdom and possibly beyond its borders" (Foucault, 2007: 325). Circulation, then, is about arranging, controlling, regulating and managing different components of the city in ways that will promote economic benefit to the state—a sort of city orchestra making tunes for profit. As circulation implies a focus on spatial considerations and not on temporal ones, I argue that rhythm is a better concept when it comes to the ordering of multiple human and non-human phenomena. Rhythm also emphasizes the notion of training by repetitions in order to become particular subjects, which is cardinal to this book.

Both Foucault and Lefebvre are also interested in repetitions as the training of the body. In order to illustrate such trainings, both Lefebvre and Foucault use military training as an example of how repetitions of movement teach soldiers what is their role. While Foucault calls this training the "instrumental coding of the body" (1972: 153), Lefebvre describes behaviors learned through repetitions as 'dressage'. Relating repetitions to disciplinary mode of governmentality, Foucault argues that regulation of the time of soldiers movements had to be conducted by constantly ordering activities "and, on the other hand, the rhythm imposed by signals, whistles, orders imposed on everyone temporal norms that were intended both to accelerate the process of learning and to teach speed as a virtue" (1977: 154). Here Foucault illustrates how objects are used to organize and orchestrate soldiers' actions towards a particular behavior, a desired rhythm, which is more efficient.

Another important similarity between Foucault and Lefebvre is their emphasis on the interrelation between the micro and macro; showing the training of the individual soldier and the army as a whole. They point to the important interplay of training individuals and populations, as Lefebvre observes, "[t]he crowd is a

body, the body is a crowd (of cells, of liquids, of organs)” (2004: 42). The individual repetitious behavior is part of a larger thing, a population that is trained to behave in specific ways. This repetition is related to the measurement and optimization of movements and gestures, which are repeated, yet never in the same way—they are always different.

Repetition, according to Lefebvre, has a productive force as it produces soldiers as obedient subjects who understand their position both socially and choreographically, but also as an army, a whole. Repetition uses elements of behaviors/actions/relations to modify and transform bodies⁹ and things. In this way, the recursive feedback loop relies on the memory of retrieval from an archive (the dynamic database) and measurements to (re)produce people and objects.

The productive force of repetition is emphasised in his section about the ‘media day’, which “never ends, it has neither beginning nor end” (Lefebvre, 2004: 46). Talking about media publishers and their ordering practices, Lefebvre argues that the “[p]roducers of the commodity of *information* know empirically how to utilize rhythms. They have cut up time; they have broken it up into *hourly slices*. The output (rhythm) changes according to intention and the hour” (Lefebvre, 2004: 48, emphasis in original). Here, Lefebvre argues that media produce people’s experience of time and space; reordering elements to create an uninterrupted feeling of the everyday. Even before the introduction of the internet and algorithms, Lefebvre argued that media companies deny their influence by “masking their actions” (Lefebvre, 2004: 48). The rhythm is conducted in a particular way, “[u]nder the direction of the conductor’s baton (his magic wand), a rhythm falls into place and extends over all performers, however many they may be” (Lefebvre, 2004: 68). Media practitioners, then, enact power with their ability to conduct people’s everyday experience. This power does not pre-exist, but is enacted as part of conducting both *processed listening* and *rhythmmedia*.

Other scholars have also been interested in the way media shape people’s mediated experiences through ordering practices. The most prominent is culture studies scholar Raymond Williams, who examines similar ordering practices through the concept of *flow*. In his research on the television (Williams, 1974), he shows how television networks and advertisers want to reorganize the way people experience programs and create a series of time units into one sequence; turning people’s experience with television into what he calls *planned flow*. Williams (1974) encourages examining the television experience as a whole rather than ‘just’ the content, specifically how its flow is influencing the way social life is performed and thought of.

In the early days of television broadcasting, as Williams (1974) illustrates, the transition between shows was marked by a sound or visual cue that signalled the intervals between distinct program units. However, once these programs started to be sponsored by commercial advertisements, they were disrupted by ads that created a different kind of flow. This *planned flow*, as Williams argues, was meant to feel natural rather than a disruption; to blur the lines between content and advertisements but also, importantly, to create a seamless flow of time that has its own programmed rhythm. As television developed, people were able to tune into it at any hour and be immersed into a *planned flow* that had its own time and structure. This reorganization of time changes people's experience and serves the financial incentives of networks and advertisers. Planned flow, as he shows, is ordered to keep us watching television while consuming ads, to engage with it without 'switching off'.

Both circulation and flow are mainly concerned with organization, meaning that the units they are organizing (for example, television series) usually have clear boundaries which are fixed and finished. But as I mentioned before with Barad, with the two sound concepts I put forward here, the categories and how they are bounded are always in the process of being produced. In this way, rhythm allows for further interventions, or 'agential cuts' as Barad calls them, within such (knowledge) ordering; it is more about processes of recursive feedback loops that reproduce such phenomena according to different local temporal and spatial conditions.

In the context of *Media Distortions*, the production of territories contains almost 'everything', as Lefebvre says, meaning different types of knowledge that have been produced by *processed listening*. Such production is constrained by the media (measuring devices), positioning (how deeply can you listen), and the *intentions* of the media companies. While this knowledge is produced (monitored, measured, detected, and recorded according to particular measuring units), it is ordered (filtered or reshaped, removed, deleted) in a particular way, and this is where the concept of rhythm comes into play. *Rhythmmedia* is a theoretical concept that examines how media practitioners (re)order people's experience, territories and the relations between them through media (analogue or digital). The 're' is important here as it points to the repetition of such actions and how each of them is conducted while relying on previous categories and metrics.

Rhythmmedia is the way media companies conduct repetitious training on people through orchestrating their experience in multi-layered media territories.¹⁰ These companies conduct the way architectures change according to the dynamic database they assemble from listening to people's behavior. This means there are

multiplicities of both the media practitioners and media that they use and reconfigure. Thus, both spatial *and* temporal orderings are in constant processes of (re)production that are influenced by the inputs that processed listening provides.

Processed listening is a process whereby practitioners decide which bodies count and how to count them (with specific tools for measurements and standardized units). This means that they decide which and how subjects will be formed. Rhythmedia is a complementary process that orders and trains (through repetitions) bodies and objects in a desired way. In doing so, these two concepts are useful in their power to produce specific arrangements and options of living and architectures. The power of (re)production is also media companies ability to decide what will be a legitimate/normal/desired knowledge (people, behaviors, objects) and rhythm.

As the stories in the next chapters will show, when specific bodies, behaviors and rhythms interfere with media companies' business model(s), they illegitimize them and filter, remove, delete, and reduce them. They become noise, disturbance, deviant, and spam. Such practices (re)produce people into several ontologies: users, producers, workers, communication channels, the 'message' and filters. It is this conduct that enables power relations to be enacted, but only when processed listening and rhythmedia are put into action. This is precisely why the topic of deviant media categories such as noise and spam is so important—to reveal their taken-for-granted deviant 'nature' and show the politics and intentions behind producing them as such.

So far, I have outlined my theoretical framework, and how it has been guided by Michel Foucault's modes of governmentality, specifically discipline and biopolitics. I have also explained the two key terms I developed—*processed listening* and *rhythmedia*—and how they are used in the context of this book. Each of the concepts will be used to explain how media companies use the seven strategies that reoccur in different ways and degrees in the three time periods examined in *Media Distortions*. The strategies of **new experts** (who has the authority to measure, categorize, record and have access to the database), **licensing** (who gave the experts the authority to conduct knowledge production practices) and **measurement** (which tools, units and practices are used to measure people's behavior) are part of *processed listening*, whereas the strategies of **restructuring territory** (how do media companies change the architecture of mediated territories to create a certain sociality) **training of the body** (the way the architecture and different types of training are meant to change and influence people's behavior to produce specific subjects), , **de-politicizing** (the way changing architecture and influencing people's behavior is meant to dissuade them from organizing and protesting

and at the same time narrowing and controlling their understanding) and **filtering** (removing, deleting, not allowing, decreasing and minimizing things that harm media companies' business model) are part of *rhythmmedia*.

In the two sections below, the chapter weaves the theoretical approaches that inspire the two main objects of this research—people and territories (through media). The first part focuses on the way that architectures have been (re)arranged to shape and control people's behavior through media. Then, the second part outlines how people's bodies and 'deviant' behaviors have been (re)configured through media.

Mediated Territories

Above I have mentioned architectures and territories, and how media companies modify them to shape people's behaviors, but what do they actually mean? How do we determine that a particular space is a territory, and what are the consequences of that? Importantly, what roles do media hold in this? There are three main scholarly fields that focus on mediated and networked territories and the way they order things and people who operate in them: geography, law, and software studies. Each of these fields examines different architectures' designs and features, which are drawn by creating boundaries with maps and borders, rules of law, or with networked building blocks such as protocol, code, and algorithms. While geographers use spatial terms such as land, terrain, zone, and territory, networked spaces are usually discussed through other spatial terms such as (cyber)space, place,¹¹ location, and site. In this section, I will amplify scholars from these fields who have influenced the way I use the concept of territory in this book.

Geographers mainly examine territories in the material sense. They explore the politics behind creating states and other regional, governmental, and religious entities by drawing boundaries and borders. Clarifying the concept of territory, Stuart Elden (2010) argues the term is usually confused with territoriality; terrain and land. As he argues, territoriality is about strategies and operations towards creating a territory, terrain "is a relation of power, with a heritage in geology and the military, the control of which allows the establishment and maintenance of order", and land "is a relation of property, a finite resource that is distributed, allocated and owned" (Elden, 2010: 804). Territory, as Elden argues, is both terrain and land, but more than this, it is a political technology, it is:

[A] distinctive mode of social/spatial organisation, one which is historically and geographically limited and dependant, rather than a biological drive or social

need ... (it is best understood through) an examination of the relation of the state to the emergence of a category of 'space'. (Elden, 2010: 810)

In this sense, territory is produced from space but does not pre-exist it. It derives from it and is in an ongoing process of (re)production that involves conflicts and negotiations. The 'mapping' of territory depends on various control techniques, which Elden argues redefine boundaries in newly produced spaces. These include law, new measuring techniques, tools and calculation, and, following Foucault's argument, configuring people as populations, as objects and things. Elden's description of territory as a political technology is particularly relevant to this book because as I show throughout the three stories, creating mediated territories is a political act—it is not neutral. So although we experience our everyday lives through them, we should always question and challenge why things are as they are, and importantly—that things—architectures, interfaces, default settings, algorithms, platforms, and technology—can always be created differently.

Spatially reordering mediated spaces create territories which are strategically used to conduct people's behaviors towards a desired rhythm. Importantly, Elden also emphasizes that territory is not a static concept, but he does not fully develop exactly how it changes. This is where rhythmmedia is a fruitful concept as it acknowledges ongoing processes of architecture changes through repetitions. Another shortcoming of Elden's (and Foucault's) notion to territory is that it focuses mainly on the production of territories as a strategy that states conduct. Although states continue to be important actors in drawing the boundaries of territories, I aim to show how powerful are the boundaries that media companies (re)draw.

Throughout the book I focus on Bell Telephone Company, the digital advertising industry and Facebook as different entities who have state-like powers, and sometimes even more powerful than them. They develop, own and manage media's measuring techniques, tools, units, and devices, and these entities standardize them. As Evelyn Ruppert (2011) shows practices of producing populations and digital subjects have also been conducted by governments. However, as many western governments turn to neo-liberal economical approaches, much of the state's sovereignty is delegated to private companies. This is especially the case with the telecommunication industry, which, during the end of the 1980s and the beginning of 1990s, saw moves towards privatization (more on this on Chapter 4). This does not mean a complete transition of power from states to commercial companies, but rather a process involving complex negotiations and struggles of power relations.

But mediated territories do not have to be only digital. A good example of the way a territory has been produced is Alain Corbin's (1986) work on the 18th-century French elite and how they operated to reorganize new social hierarchies by demarcating a new urban territory through smell. The French city at that time was redesigned to create better sewage systems and different architectures to create spatial boundaries between the different classes of smells and importantly – of humans. This was an intention to control the way people understood and practiced different kinds of 'airs' or 'gasses' by creating a distinction between the normal category—smell—and its deviance—stench. It involved the creation of a terminology that could describe different kinds of odour, special instruments that would measure, detect, calculate and analyze them, and then sort and arrange them in a particular hierarchic taxonomy—a discourse was born: pneumatic science.

Mediated territories, then, are not only produced through software or internet networks, as many new media scholars tend to present, they are also produced through physical, analogue, and sensorial tools. This example shows how similar strategies to produce knowledge through media technologies have been used in multiple territories, physical or digital. This is the reason why I decided to focus on different time periods, to show a longer genealogy of using media categories and how important it is for media scholars to acknowledge such histories.

Fast forward to the beginning of the 1980s, new territories were mediated by computers connected to networks soon to be called the internet and the World Wide Web. 'Cyberspace' was one of the early terms used to describe these new spaces and coined by science fiction author William Gibson in his famous book *Neuromancer* (1984). According to Mike Featherstone and Roger Burrows, cyberspace is:

an information space in which data is configured in such a way as to give the operator the illusion of control, movement and access to information, in which he/she can be linked together with a large number of users via a puppet-like simulation which operates in a feedback loop to the operator. (1996: 2–3)

As they argue, the cyberpunk culture characterized that period and mainly stemmed from the USA west coast hippie (but very straight and masculine) culture, also pointed to the narrowing of public space and, at the same time, its privatization along with other aspects of the social sphere. As Wendy Chun argues:

When the Internet went public by being privatized in 1994–1995, telecommunications and cable companies began building backbones (MCI/WorldCom was the majority owner of the Internet backbone in 2002). The Internet, then, as

the Supreme Court argued, became a shopping mall—a privately owned, publicly accessible space—and the entrance of cable companies as Internet Service Providers (ISPs) profoundly altered the backbone's status, since these ISPs closed their cables to competing traffic. The disappearance of publicly owned, publicly accessible spaces (where publicly owned means state owned) and the concurrent emergence of publicly accessible, privately owned spaces has driven the transformation of public/private to open/closed. (Chun, 2006: 38)

The way many people in western countries use the internet has been under ongoing conflict and negotiations between states, regional actors (such as the European Union), commercial actors, and, of course—the people who use it. Peeling the layers of the history of the internet, Janet Abbate uncovers how processes of standardization have been restructuring the internet's territory quite radically from its inception in the 1960s until its commercialization in the 1990s. This was conducted through modifying the internet territory's architecture, values, and uses. The meaning of the internet, she observes, “had to be invented—and constantly reinvented—at the same time as the technology itself” (Abbate, 2000: 6). What is useful here is Abbate's outlining of the way that, in each decade, new and different interest groups joined this standardizations struggle while others were made redundant or left outside the power game. She also emphasizes the way users were co-creating the internet with their spontaneous decisions. Importantly, Abbate shows how the internet was invented and hence nothing in the way it is designed and operated is naturally given—it is an ongoing political struggle to construct a particular mediated territory. Therefore, her work is important in showing how the production of internet's territory is influenced by standards conflicts with changing interest groups *and* users' behavior; it is a co-creation of multiple actors with different degrees of power. Each of these media companies uses different strategies to influence and shape the internet according to its needs.

State and regional laws have historically and traditionally been the main tools to create protocols that construct the right way to behave in territories. This also had effects on the way the architecture of these territories was designed. Linking cyberspace to its origin in 1948 and cybernetics, Lawrence Lessig (1999) argues that this new territory is also about better control of communication, but this time it is guided by commerce. As Lessig argues, in cyberspace regulation comes in the shape of software and hardware that create a different kind of law than previous legal instruments, such as constitutions, statutes and legal codes. In cyberspace, as his famous phrase argues, ‘code is law’. Since code is one of the building blocks of internet territory, it also means that it prescribes law, and it is a form of exercising (or in computing, executing) power. As Lessig observes, “[t]he selections about

code are therefore a selection about who, what, and most important, what *ways of life* will be enabled and disabled” (Lessig, 1999: 66, emphasis in original). However, the internet territory is unique in that it can mutate and change much more rapidly than physical and material territories. Therefore, the internet has a greater capacity to control, shape, and manage behaviors to produce particular subjects.

The capacity of governments, commercial actors, or other organizations to control behaviors, argues Lessig (1999), depends on the way the architecture is designed, the way that code is written. Behaviors in cyberspace, then, are dependent on the way the architecture is designed to regulate them, but also, as I argue, to (re)produce them. According to Lessig, there are four factors that regulate behaviors directly or indirectly in cyberspace: architecture, market, law, and norms; and each of them influences behavior in a different way and capacity. These four factors will be examined in different capacities as they provide good criteria to look at media categories. But again, what Lessig does not tune into is the way in which all of these entities produce different entities through his ‘code is law’. In addition, law requires fixed categories and definitions, but as I will show in some cases the lack of definition and clear categories can be more powerful (more on this on Chapter 4).

While Lessig focuses on code, protocol is another way to control behaviors in software-mediated territories. Coming from a science and technology mixed with law approach, Laura DeNardis (2009) focuses on protocol as an important infrastructure design that regulates behaviors on the internet. DeNardis examines the politics behind the transition between the internet protocol version 4 (IPv4) to IPv6. Protocols, as DeNardis argues, are rules for communication that have a common language that orders and controls the global rhythm of information. Protocols also have the power to make decisions that influence every segment of people’s lives, as well as society’s access to knowledge, security, and economy. As DeNardis argues, this transition:

[I]nvolved complex technical choices, controversial decisions, competition among information technology companies, resistance from large American companies to the introduction of any new protocols, and an institutional choice between a protocol developed within the prevailing Internet governance institutions and one promoted by a more international institution. (DeNardis, 2009: 4)

What DeNardis makes clear here that nothing in the internet territory was a natural evolution – It was an ongoing process of decision making between different institutions and their values.

Due to the fact the internet's territory is made of code, software, algorithms, and protocols, a new field started to take shape to tackle the sensibilities of these computational building blocks. Software studies emerged in the early 2000s and stemmed mainly from the media and communication field. This field emerged after criticism of the focus on media content and representations rather than the technical aspects of media. This is despite the fact that other media scholars, such as Harold Innis (1951), then later Marshal McLuhan (1964) and Raymond Williams (discussed above), were also concerned with such topics.¹² Scholars of software studies examine software from different perspectives such as new media art (Manovich, 2001), games (Bogost, 2008), protocols (Galloway, 2004; Chun, 2005, 2006), geography (Kitchin and Dodge, 2011), philosophy (Berry, 2011), and ecology (Fuller, 2003, 2005). What many of them argue is that you do not have to be an engineer or study computer science in order to examine these topics. On the contrary, focusing on these topics without taking for granted how they are taught allows for a more critical analysis. This field was further developed by other scholars who believe there is a need for an even finer resolution of study into platform (Bucher, 2014) and app studies (Helmond, 2015). In his edited software studies lexicon, Matthew Fuller argues that software studies aims to understand the materiality of its operation, such as:

[T]he particular characteristics of a language or other form of interface—how it describes or enables certain kinds of programmability or use; how its compositional terms inflect and produce certain kinds of effects such as glitches, cross-platform compatibility, or ease of sharing and distribution; how, through both artifact and intent, events can occur at the level of models of user subjectivity or forms of computational power, that exceed those of pre-existing social formatting or demand new figures of knowledge. (Fuller, 2008: 4)

It is precisely the way that interfaces which are the way code, algorithms and software reorder the internet territory architecture's design I am interested in exploring. For example, Wendy Chun (2006) argues that the increased amount of attention given to texts and images on the computer screen conceals the way users are at the same time being coded numerically and circulated as commodities without their knowledge through invisible, black-boxed procedures. Throughout her work, Chun shows the taken-for-granted ideological and political power that software, its default settings (which, as she argues, are ironically referred to as 'your' preferences), translation between computer code and human language, and sliding between modes of (in)visibility that it produces. *Media Distortions*, then,

builds on her work by using modes of listening, as they are more productive in examining such power processes.

Several scholars who come from geography disciplines also contributed to the development of software studies, and Rob Kitchin and Martin Dodge's (2011) work on the term 'code/space' is particularly relevant here. They argue that "software produces new ways of doing things, speeds up and automates existing practices, reshapes information exchange, transforms social and economic relations and formations, and creates new horizons for cultural activity" (Kitchin and Dodge, 2011: 3). Their work also seeks to explore the multiple processes conducted by and on human and non-human, architecture and algorithms, and also law. Their term 'code/space' draws a lot of inspiration from the work of the science and technology studies scholars Susan Leigh Star and Sheila Jasanoff (without properly acknowledging them), whereby they argue for the spatial co-production of software and everyday life. Kitchin and Dodge criticise software studies scholars for too often taking space for granted. As they argue:

Space is not simply a container in which things happen; rather, spaces are subtly evolving layers of context and practices that fold together people and things and actively shape social relations. Software and the work it does are the products of people and things in time and space, and it has consequences for people and things in time and space. Software is thus bound up in, and contributes to, complex discursive and material practices, relating to both living and nonliving, which work across geographic scales and times to produce complex spatialities. From this perspective, society, space, and time are co-constitutive—processes that are at once social, spatial, and temporal in nature and produce diverse spatialities. (Kitchin and Dodge, 2011: 13)

Instead of arguing that people and things 'fold' together, *Media Distortions* argues that they are orchestrated in a particular rhythm by media companies who conduct *rhythmmedia*. Software, code, algorithm, and protocol affect both non-human and humans, as their operations and executions direct the way that people can behave, understand and communicate with and through computational territories. However, software studies scholars tend to conceptualize such ordering as 'how events can occur' (in the Fuller quote), or using terms such as 'flow', 'alive' or 'coded processes'¹³ (Kitchin and Dodge, 2011: 5–6). Such terms and arguments conceptualize spatial and temporal orderings as if they 'just happen' without any planned strategy behind them. On the other hand, I use *rhythmmedia* to bring back the intention and strategy behind the way mediated territories' architectures order people, and objects.

Another problem with software studies is its absolute reliance on the concepts of vision and (in)visibilities when examining power relation and execution. Since most of its research objectives are part of multi-layered computational spaces, it is quite odd that vision has been chosen to describe power relations. *Media Distortions* takes software studies' focus on architecture/interface design and various computational procedures (code, protocol, algorithm, etc.) but uses processed listening and rhythmmedia as concepts of interrogation. The way that bodies are configured through such territories is examined now.

Mediating Bodies

Puppet Master: *Life is like a node which is born within the flow of information. As a species of life that carries DNA as its memory system... Man gains his individuality from the memories he carries. While memories may as well be the same as fantasy, it is by these memories that mankind exists. When computers made it possible to externalize memory, you should have considered all the implications that held.*

Nakamura (Project 6 leader): *Nonsense! No matter what you say, you have no proof that you're a life-form!*

Puppet master: *It is impossible to prove such a thing. Especially since modern science cannot define what life is... I am a life-form that was born in the sea of information. (Ghost in The Shell, 1995)*

The time periods examined in this book mark significant turning points, ontological changes in the way that the human body is mediated, rendered and configured. Between the emergence of electronic media in the 1920s telephony, through the development of broadcasting, computers, the internet, to contemporary social media platforms, the body has mutated into multiple territories. When talking about such mediated bodies, it would not be accurate to discuss 'offline' and 'online' as oppositional presences.

A great example of this is the Japanese anime (based on the 1989 comic) *Ghost in The Shell* (1995), which I could probably dedicate this whole book to (but don't worry, I won't), and how it portrays philosophical questions about where do we draw the line between human and machine. The film talks about humans who managed to be augmented with cybernetic bodies; their human brain, called 'ghost', operates the mechanical body, called the 'shell'. But as seen above here in a dialogue between an entity named Puppet Master and Project 9's leader Nakamura, these lines are very blurred. The film amplifies the way not only categories of human versus machines are fluid and flexible but also what we can

do in such bodies. That is, the main character, Major Motoko Kusanagi, slides between several spaces at the same time, in dynamic environments which themselves keep on changing. In addition, memory systems *and* access to them are important in shaping people.

Challenging the boundaries of foundational categories such as human, machine and animal, Donna Haraway (1985) argues that “[n]o objects, spaces, or bodies are sacred in themselves; any component can be interfaced with any other if the proper standard, the proper code, can be constructed for processing signals in a common language” (Haraway, 1999: 212). Like other feminist technoscientists, Haraway rejects essentialism and notions about unitary subjects and argues that there is no distinction between biological bodies and computer simulation.

In this sense, mediated bodies are more like extensions of ourselves, whereby people can tune in and out between modes of ontology. As Karen Barad argues, “‘Human bodies’ and ‘human subjects’ do not preexist as such; nor are they mere end products. ‘Humans’ are neither pure cause nor pure effect but part of the world in its open-ended becoming” (2003: 821). Because human subjects are in a continuous project of (re)production, the way media categories are used affects people’s options of living. It affects how they understand and engage with media and consequently how they perform their subjectivities and relate to others, both human and non-human. Therefore, conducting processes on people, their behaviors and territories is not bounded exclusively to physical or digital spaces but rather to specific strategies of media practitioners who are creating multiple modes of ontology and entangled assemblages of human and non-human actors.

Posthuman feminists examine similar topics of boundaries of the body, with one of the most prominent voices in the field is Katherine Hayles (1999). Coming from literature, Hayles provides another perspective on how the post human body is assembled, focusing not only on science but rather on science fiction. She argues that there is no distinction between biological bodies and computer simulation. Hayles emphasizes that “[t]he posthuman subject is an amalgam, a collection of heterogeneous components, a material-informational entity whose boundaries undergo continuous construction and reconstruction” (Hayles, 1999: 3). Always in a process of becoming, as she argues, human and posthuman coexist with changing configurations according to historical and cultural contexts.

Hayles is particularly relevant to this book as she examines concepts of embodied and disembodied subjectivities in cybernetic discourse. Whereas Hayles’s departure point is 1945, *Media Distortions* focuses on the two decades that preceded Claude Shannon’s 1948 mathematical theory of communication. The reason behind this is to flesh out the key events which influenced the conceptualization of

humans as processors, and, importantly, their bad behavior as noise. What cybernetics introduced, as Hayles shows, is a new categorization of life-forms, which reorders and prioritizes information in the shape of code made of bits (invented by Shannon). Information, however, as Hayles emphasizes, exists only through media, and, as this book shows, not only digital media. Therefore, these new life forms were created by drawing new boundaries through media that will define what the deviant form is.

Come to the Dark Side, We Have Cookies

Very little scholarly work has been conducted on deviant media, particularly spam, in the social sciences. The two most prominent works are *The Spam Book*, an edited collection by Jussi Parikka and Tony Sampson (2009), and Finn Brunton's *Spam: A Shadow History of the Internet* (2013). In both accounts, spam is associated with 'bad', malicious, and deviant bodies and behaviors. Sampson and Parikka's edited book, for example, explores themes such as digital contagions, pornography, virality, and censorship. They argue that they go beyond representational analysis and the binary normal and abnormal, and yet the chapters themselves are still bounded in these assumptions.

Most of these mediated 'anomalies' are constructed as such by media owners, managers, and other interest groups. For example, the first record of what can now be considered to be a computer virus was called *creeper*, and communicated during the 1970s through ARPANET's network. But, as Jussi Parikka's (2007) archaeology of computer viruses shows, the boundary between computer viruses and standard procedures is hard to be distinguished: "the basic ARPANET network programs contained worm-like routines, blurring the distinction between 'normal' programs and parasitic routines.... Essentially the same program can be defined as a utility program in one context and as a malware program in another" (2007: 51). Thus, computer viruses were portrayed as a disruption to the internet, even if the 'parasitic' program had similar behavioral characteristics to the 'authorized' programs. Here we can listen to rhythmmedia in action, and tune into how some orderings are framed as productive while others as disruptive to the economic models of these systems. Computer viruses are perceived as a threat to the 'normal' and 'appropriate' code of conduct on the internet, just like spam.

Since the proliferation of computer viruses, argues Parikka, people have had to be trained to become more aware of their own security while using the computer

because they need to be accountable for the ‘safety’ of their mediated bodies. This training is presented as crucial to maintain people’s hygiene and safety by creating a virtual immune system which will be secure from contamination. These online immune systems can be both systems deployed by the software itself, by anti-virus/spam services, and through self-examination, monitoring and reporting performed by users (for example, installing anti-virus software or marking a message as spam).

Computer science scholars have analyzed the behavioral patterns of different living forms to establish whether they are human or not. Usually, these scholars use Bayesian statistics, which divide information into binary categories of spam and not-spam. This method assumes specific characteristics that draw the boundaries of what is a legitimate mediated living form (message, user, activity) and what is not. One of the most prominent scholars on computer immunity systems is Stefanie Forrest, who has conducted research in this area since the early 1990s. In a recent article, Forrest and her colleagues argue that:

Protecting computers involves activities such as detecting *unauthorized use* of computer accounts, maintaining the *integrity* of data files, mitigating denial-of-service attacks, and detecting and eliminating computer viruses and spyware. These activities can be viewed as instances of the more general problem of distinguishing self (*legitimate* users, uncorrupted data, etc.) from *dangerous* non-self (*unauthorized* users, viruses, and other malicious agents). (Forrest and Beauchemin, 2007: 183, my emphases)

Assuming computers need to be ‘protected’ shows that the organizations that produce and manage these applications believe that these need to be under their own control. These media companies want people to use their devices and services in a particular way. Therefore, anything that might harm them will be categorized and reordered as non-authorized, dangerous and, as Forrest indicates above here—‘non-self’. This kind of rationale also gives a digital life, a ‘self’, only to legitimate users who behave in the appropriate way, according to rules drafted by media companies, while ‘taking life’ from illegitimate ones. By doing so, computer scientists are conducting rhythmmedia, redrawing the boundaries of the normative and healthy body that can live in these mediated territories.

In her previous work, Forrest relied on the ability of immune systems to distinguish between normal and abnormal patterns of behavior stored on hard disks (Forrest et al., 1994). However, when it comes to networks, Forrest and Beauchemin (2007) argue that more dynamic definitions of the ‘self’ are required. Thus, Forrest argues that “computer immunology proceeds by hypothesizing a sufficient

set of mechanisms needed to produce *a desired behavior* and implementing them as computer programs” (Forrest and Beauchemin, 2007: 192, my emphasis). This means that several media practitioners are involved in creating measuring tools and units that first conduct processed listening—monitor, measure, detect, categorize and record. After this knowledge production establishes what are legitimate behaviors, they conduct rhythmmedia that will only enable the desired ‘self’, an authorized body. But determining the role and purpose of the immune system, and the way it can then be translated into computation, is not a simple task, as Forrest observes in her recent article. These questions are at the heart of *Media Distortions*: who has the authority to conduct these processes and for what purposes? How do such experts produce authorized bodies/subjects? What happens to unauthorized bodies?

What these questions and arguments imply is that there are inappropriate and ‘wrong’ ways of using media. I use inverted commas here on purpose, because this is determined by specific media companies who want to conduct people’s experience in their territories. In this context, the way that media are used can be determined and managed by media devices’ owners and designers, but also by the owners of media infrastructures, which can be both commercial companies and governments. Scholars have examined situations in which people ‘crack’, trick, ‘pirate’, intervene, modify, intrude, tinker, and manoeuvre media technologies. These people are labelled in these ways because they have tried to challenge the rhythmmedia by which they were ordered to behave. From specific groups such as tricksters, phreakers, crackers, and hackers (Jordan, 1998, 2009, 2017; Coleman, 2011, 2012, 2014; Kubitschko, 2015), to illegitimate actions such as aspirating (Sinnreich, 2013), flaming and trolling (Karppi, 2013; Phillips, 2015), and distributed denial of service (DDoS) (Sauter, 2013, 2014), all of these behaviors have also been categorized as spam(ming).

An early example of the kind of activity was outlined in the first guidelines for email ethics and etiquette, written in 1985 by Norman Shapiro and Robert Anderson and sponsored by the NSF and the RAND Corporation. They warned against misinterpretations arising from the fact that casual and formal email messages look the same. Shapiro and Anderson wanted to guide towards an efficient, productive and appropriate use of the then new technology. They advised readers that “if you must express emotion in a message, clearly label it”, “avoid responding while emotional”, and “if a message generates emotions, look again” (Shapiro and Anderson, 1985). In what seems to be one of the first internet mansplaining, computer scientists dudes wanted people to avoid emotional outbursts in emails, which were termed by Shapiro and Anderson as ‘flaming’

(later changed to netiquette). This media category was portrayed as unwanted ‘side effects’ that had to be avoided.

As one of the earliest categories of illegitimate communications on the internet, argues Esther Milne (2012), flaming attracted a lot of interest in academia, spanning from language convention, gender function, organisational behavior, rhetorical performance, the role of cues online and so on. Flaming is usually termed ‘uninhibited behavior’, but actually it has many definitions that revolve around the normative way of behaving on the internet. Milne points to the taken-for-granted definition of the category of flaming, which portrays this media behavior as an aggressive anti-social activity that should be avoided. It is only in the past two decades—when the tech bros realized that people expressing their emotion can also be productive, and profitable—that these behaviors were promoted in platforms such as Twitter, Reddit and TikTok. Similar to this research, what Milne shows is that flaming, like spam, is much more nuanced and cannot be boxed into oppositional definitions.

Attempts to manipulate, play, disrupt, and test the boundaries of media technologies have been usually carried out by humans¹⁴ and framed as ‘hacking’. This media category is usually portrayed as a ‘wrong’ way to use technology because people who hack do not conform to the standards created by corporate, regional and global actors. Hacking can be done for various reasons, including political, curiosity, humour, commercial and criminal.

According to Tim Jordan and Paul Taylor, “what makes an intrusion a hack or an intruder a hacker is not the fact of gaining illegitimate access to computers by any of these means but a set of principles about the nature of such intrusions” (1998: 759). Similar to computer viruses, what they emphasize is that both media companies (such as IBM) and governmental authorities (such as CSI agents) hire hackers to discover possible ‘vulnerabilities’ in their network systems. Because these practices are essentially the same, both of these types of media companies try to present radical ethical differences between their practices and illegal computer intrusion. In one context, this will be called ‘maintenance’ and ‘security’ (commonly called ‘red team’ in cyber-security) and in another ‘hacking’. Gabriella Coleman (2011, 2012, 2014), argues that what computer hackers do is *reorder* a network infrastructure to influence people’s behaviors in them, or, in this context, they conduct *rhythmedia*. Therefore, constructing media categories is a powerful instrument to draw boundaries between legitimate and illegitimate behaviors of actors who are participating in this territory; from ‘ordinary’ users to commercial companies, governments, criminals and pranksters.

Another media activity categorized as illegitimate is Distributed Denial of Service (DDoS). This kind of activity is often used by political activists and, as Molly Sauter argues, is “when a large number of computers attempt to access one website over and over again in a short amount of time, in the hopes of overwhelming the server, rendering it incapable of responding to legitimate requests” (Sauter, 2013: 5). This kind of behavior, which is usually categorized as an ‘attack’, overrides netiquette, because it is both a ‘burden’ on the infrastructure and considered to be an infringement on the property rights of private actors (i.e. websites or platforms). Being a burden and an infringement are the justifications to categorize such action as illegitimate, although similar behaviors are conducted by media practitioners.

According to Sauter, DDoS is a technique used by activists, criminals (for cases of extortion, harassment, etc.) and bots,¹⁵ but also website owners themselves. The latter usually use a technique called ‘stress-testing’, which is a tool that tests the way machines react to high traffic for research purposes. Therefore, categorization of behaviors on the internet is a rhythmmedia practice; it establishes and constructs power relations between different actors, and these relations change constantly. Whoever has the power to determine the legitimacy of the practice used by specific groups of people—activists, criminals, governments or website owners—is positioned at the top of the online territory hierarchy, at that particular moment.

More recently there has been some more attention from academics to the ‘dark’ side of the internet with scholars such as Robert Gehl’s (2018) who explored the Dark Web and Fenwick Mckelvey who has developed the concept of internet daemons (2018). Mckelvey argues in his book that these daemons:

[M]ake the internet a medium of communication. Their constant, inhuman activity ensures every bit of a message, every packet, reaches its destination ... Daemons read packets, identify their contents and type of network, and then vary the conditions of transmission based on the network’s needs, their programming, and the goals of those who program them Through their flow control, internet daemons influence the success and failure of networks and change habits of online communication. (Mckelvey, 2018: 4–5)

Both Gehl and Fenwick’s work point to important understanding of how the internet infrastructure becomes categorized as deviant (Gehl) and how the flow of things is controlled (Fenwick). However, they also focus mainly on computer-mediated territories and in doing so narrow the exploration and make arguments that are specific to the internet and web.

Conclusion: What's in the Mix?

So how do we examine deviant media? As I was starting this project I felt that the theories and vocabularies we have so far were not enough, so like any DJ I made my own mix. In this chapter I assemble several records and make a special soundtrack to guide this book. By carefully picking tunes that fit together, this chapter provides the theoretical and conceptual tools that guide the way I examine deviant media. In other words, I provide a different theoretical approach to examine media power through sound, not vision.

I start by showing how Michel Foucault's modes of governmentality, and specifically discipline and biopolitics, are productive tools to think about power that is enacted on actions, whether individual or populations. But contrary to Foucault and many other in media and communication, STS, software studies and others, I propose sound as a conceptual framework. I explain the two key concepts I have developed: *processed listening* and *rhythmmedia* which attend to the multiplicities of actors, communication channels and processes that happen in media. Their advantage as sound concepts relate to their ability to redraw boundaries of spaces and times and this is particularly fruitful for multi-layered mediated territories whether analogue or digital.

These two concepts are complementary, and since they operate in a feedback loop, it is difficult to say that one follows the other. However, *processed listening* does tend to come earlier, as it concerns the way media companies listen to different sources, with several tools to produce knowledge. This is an ongoing process that involves monitoring, detecting, measuring, collecting, categorizing and recording behaviors in mediated territories. Listening is useful as it can cross spatial boundaries and, therefore, redraw the boundaries of bodies and architectures. The more listening capacities media practitioners have, the more bodies and territories they can measure and, in turn, produce.

This dynamic database is then ordered with rhythmmedia, which filters, modifies and trains people's behaviors, by restructuring the mediated territories. These procedures, then, are an ongoing process in which media practitioners' actions on people's actions and architecture then (re)produce them into subjects and territories. In this way, power is always in the process of being enacted, and, in order to be efficient and economical, it constantly changes and mutates according to the considerations that are required to maintain such power.

In the second half of the chapter, I explore how other scholars examined 'illegitimate' territories and people's behaviors and what were the gaps that needed to be addressed. In the first part, I showed why I chose the term territory,

a political technology of spatial organization, as Elden argues, which is relational and dependent on social and cultural considerations. Unlike Elden and other geographers, I take this term to examine the relation of media companies and the way they use strategies of territoriality over spaces. I then moved onto legal scholars and software studies scholars and showed how they examined the practice of drawing borders through laws, code, protocol and software.

In this section, I amplified how *rhythmedia* is a better term to (that flow or channelling) use when analysing how people and objects are orchestrated through media. The strength of this concept is that it allows for an examination of multi-layered mediated territories and the ways that people and objects are reordered in them through repetitions. Such repetitions train people to behave in particular ways, leading to the second and final part of this chapter, which focuses on bodies.

In the last section, I showed how other scholars have been examining the configured body and particularly how I take inspiration from feminist technoscience. I especially amplify their rejection of fixity and essentialism, mainly when it comes to making distinctions between humans and machines. Feminist technoscience also inspired the key theme of *process*, and its multiplicities (of practitioners, bodies, territories and knowledge). I do not, however, take their overemphasis on vision as a way to produce knowledge, and instead offer sound, and especially listening and rhythm, as ways to think, theorize and conduct research. I show how ‘deviant’ behaviors that were categorized as spam, but also flaming, DDoS and hacking have been part of media practitioners’ ongoing strategies to establish legitimate behaviors through media. I showed the politics behind such media categories and how, as scholars, we need to engage critically and challenge the way they became to be understood as such.

Notes

1. Foucault was elected in 1970 as the new chair of the department of *The History of Systems of Thought* (the name was changed from the department of *Philosophy and History*). As part of this position, he conducted a series of public lectures from 1970 until 1984, when he died. These lectures were recorded and then turned into books.
2. The English translations came out only in 2007 and 2008.
3. Listening on the internet by ‘normal users’, has been explored by scholars such as Kate Crawford (2011). Crawford argues that users shift between listening and commenting, which are important forms of participation online.
4. According to Stuart Elden, Foucault’s work on governmentalisation also ‘implies a process, a mode of transition and becoming rather than a state of being. This allows us to recognise the further temporal aspect to Foucault’s analysis’ (2007: 568).

5. As Barad argues, intra-actions are more suitable because the usual interactions “presumes the prior existence of independent entities/relata” (Barad, 2003: 815).
6. She argues that “Temporality and spatiality emerge in this processual historicity. Relations of exteriority, connectivity, and exclusion are reconfigured. The changing topologies of the world entail an ongoing reworking of the very nature of dynamics” (Barad, 2003: 817–818). I develop this notion, the ordering of time and space, and call it *rhythmmedia* in the following pages.
7. As Chapter 3’s second section on the telephone operators will show, such practices also happen ‘offline’.
8. Interestingly, Miyazaki (2012) also shows that, in the early 1960s, computational culture involved machine listening, which meant that there were auditory interfaces. This means that the computational process has produced various rhythms that are then transduced into waves that come through amplifier-speaker systems as audible sounds. Such speakers were built into the circuits of early computers’ mainframes, and show that listening was a practice of knowledge production in the early days of computing.
9. As Foucault argues, “In becoming the target for new mechanisms of power, the body is offered up to new forms of knowledge. It is the body of exercise, rather than of speculative physics; a body manipulated by authority, rather than imbued with animal spirits; a body of useful training and not of rational mechanics, but one in which, by virtue of that very fact, a number of natural requirements and functional constraints are beginning to emerge” (Foucault, 1972: 155).
10. Such multiplicities are also mentioned by Lefebvre in his work with Catherine Régulier, which is included at the end of *Rhythmanalysis*. They also argue that, whereas “mechanical repetition works by reproducing the instant that precedes it, rhythm preserves both the measure that initiates the process and the re-commencement of this process with modifications, therefore with its multiplicity and plurality” (Lefebvre and Régulier, 2004: 79).
11. As Chun argues, “place designates a finite location, whereas space marks an interval. Place derives from the Latin *platea* (broad way), and space derives from the Latin *spatium* (interval or a period)” (Chun, 2006: 45).
12. German materialist media scholars, such as Friedrich Kittler, Bernard Siegert and Wolfgang Ernst, have also made such calls. The most prominent of them is Kittler, who asks to divert the focus of media studies from the human point of view towards an emphasis on the discourse of the technical and material.
13. Although Kitchin and Dodge (2011) use the word ‘processes’ repeatedly in their work, they do not fully engage with the term or examine the considerations and configurations such processes conduct. Coming from the geography discipline, they focus mainly on the spatial aspects, rather than temporal ones; as they argue, their “principal argument, then, is that an analysis of software requires a thoroughly spatial approach” (Kitchin and Dodge, 2011: 13).

14. Although also by animals, as Helen Pritchard (2013) shows.
15. These non-human actors are used for various reasons, not only political. For example, Bucher (2014) shows how a bot can be used for humour or performance art, while Gehl (2013) argues that bots challenge our thought of what it means to be human.

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Noisy Behaviors on the Line

This chapter focuses on noise as an early category of deviant media. It digs deeper and shows how noise is a media category that has been at the center of knowledge production conflicts, negotiations, and power struggles. In this way, I show that there is nothing inherently ‘noisy’ about noise; it is a flexible and mutable category that changes according to the way it is produced by media companies. By exposing the politics behind differentiating noise from sound, the following pages show how significant this category is in our everyday lives. Importantly, the chapter shows why some actors wanted to shape our understanding of noise.

As I argue in the introduction to this book, this historical account is important in understanding how the category of deviant media changes from noise to spam. What does not change is the interest of media companies to shape and influence people’s engagement with media. In this way, what this chapter amplifies is how noise is part of a larger project, enacting power to influence how we engage and understand media.

In the early 20th century, Bell Telephone was a much bigger media company than Facebook or Google are today. The company managed to hold its power for nearly a century, and in this chapter we follow Bell Telephone through its earlier days, as it established and maintained its power. As the company was so influential, it managed to attract the finest minds of the time. One of them was

Claude E. Shannon, who is now known as the father of digital communication. Shannon, who had a mathematical and electronic engineering background, worked at Bell Laboratories in the 1940s. In 1948 he presented one of the first well-known (mathematical) communication models, also known as Information Theory. In 1948 Shannon published in the *Bell System Technical Journal* an article which revolutionized understanding and theorization of communication (and information). This model presented a linearly directed progress from the source who sent a message through a transmitter, which then sent a signal to a receiver and then to the destination. Information theory is considered to be the foundation of much of contemporary understanding and the functioning of computers and digital communication because it introduced the *bit* as a new communication unit.

Shannon's article also showed a diagram of communication, which illustrated how noise was an integral part of the communication channel. Shannon defines noise as "statistical and unpredictable perturbations" (Shannon, 1949: 11). However, the only people who could conduct the measurement and analysis of such statistics and decide when a certain sound will be considered as noise were Bell Telephone technicians. In this way, Bell Telephone (Bell) held a crucial position in conceptualizing and defining noise; they were the **new experts** with the authority to make noise a category. Although information theory is thought to be inspired exclusively by engineers, this chapter will trace other sources of inspiration. In what follows I examine the events that preceded information theory to understand the evolution of the concept of noise. This is not to argue for causal effects of these two events, but rather to create the histories of the subjects, as Foucault argues (1982: 777), or in this case, the mediated subject.

Measurement is key to making a distinction between sound and noise. Presenting itself as a specialist in measuring sound, Bell positioned itself as the obvious choice—the media company received a **license**, an authority to make legitimate knowledge claims about noise. The two events that I explore in this chapter involve measuring different types of things—people and territories. The first event is the Noise Abatement Commission (NAC), which conducted a **measurement** of New York City (NYC), and produced the report *City Noise* in 1930.¹ This Commission collaborated with Bell Laboratories to measure various places in NYC using devices that used quantitative units. The second event focuses on the 1930s and 1940s training programs Bell developed for 'good telephone usage', aimed towards its female telephone operators called *A Design for Living*. Bell measured and analyzed their operators' behavior to train them to become better components of its system.

This chapter will show how Bell established its powerful position by listening to the behaviors of people in NYC and the behaviors of their telephone operators. This listening capacity enabled Bell to know people across NYC and also its female employees inside *and* outside the workspace. Such strategies, then, produced both people and spaces through their measuring tools and units into subjects and territories. While the first event shows how Bell tuned into people and restructured the boundaries of the city architecture; the second event the media company expanded the scope of its listening by reconfiguring the operators' bodies and minds, inside *and* outside the workplace. These programs to **train operators' bodies** were meant to turn the telephone operators into efficient and fast machines, destabilizing the boundaries between humans and non-humans.

These stories show the way Bell, sometimes in collaboration with other interest groups, constantly produced its inventions and services, and along the way, produced new subjects and territories to fit its business model. To do that they needed to remove, **filter**, and eliminate potential disturbances to their business. As these events came two decades before Shannon's Information Theory, they provide alternative historical grounds for the construction of people and territories through sound and noise. This chapter will show how modes of governmentality, specifically discipline and biopolitics, construct the difference between sound and noise. It shows how these governing strategies were used by Bell and the NAC to educate, manage, control, and govern specific groups of people and specific behaviors, as well as re-ordering and re-shaping NYC. In other words, the following chapter will show how noise was developed and used in the early 20th century, and how these developments point to similarities and correlations with how spam is used in the early 21st century.

The Noise Abatement Commission in Early 20th Century New York City

The industrialization of western society in the early 20th century introduced the intrusion of machines into the urban soundscape through factories and transportation, and then penetrated beyond the public space into the private space of people's homes. Along with the change in the texture of the city and the home came noise, which subsequently became a tool used to redraw boundaries of territories and people. Noise as a distinct category was used to represent, manage, and control unwanted sectors of society and unwanted behavior. Demarcating such a distinction was also meant to legitimize people, practices, and areas as the

appropriate ‘sound’ for a particular territory. To understand how noise was used by Bell, this section focuses on the NAC, formed in 1929, and its involvement with Bell Laboratories (Bell Labs).

On January 1, 1925, the American Telephone and Telegraph (AT&T) and its subsidiary Western Electric (the manufacturing company of all telephone and radio equipment) incorporated to form Bell Telephone Laboratories. For many years, Bell Labs held a monopoly in the creation of media technologies and their corresponding standards. This newly formed company was meant to be more efficient as two engineering departments (AT&T and Western Electric) was a waste of resources. Jon Gertner (2012) in exploring the evolution of Bell Labs argues that, “Bell Labs employees would be investigating anything remotely related to human communications, whether it be conducted through wires or radio or recorded sound or visual images” (2012: 31). Bell Labs not only investigated human communication but also took active part in shaping it and its components, from their own workers and onto the people who used their devices.

The precursor of the NAC was the Society for the Suppression of Unnecessary Noise (SSUN), which was formed in 1906 by Julia Barnett Rice, a physician and wife of the publisher and businessman Isaac Rice. Mrs. Rice had recruited many prominent figures for her campaign and cared dearly about noise. Her first successful step was the Bennet Act of 1907, introduced by New York congressman William Bennet, who designed this federal legislation to regulate unnecessary blowing of whistles in harbours and ports (Thompson, 2004: 121). Although some attention was given to the SSUN, it was only at the end of the 1920s with the stock market crash and increased immigration to the city that Mrs. Rice’s efforts bore fruit and reached headlines.

After many complaints from concerned citizens about noise, Mrs. Rice, in collaboration with Dr. Shirley W. Wynne, NYC’s Commissioner of Health, founded a special commission in October 1929, to study and measure the city’s noise and develop means to abate it. The NAC was the joint venture of many interested parties: the mayor of NYC, James J. Walker; medical specialists of neurology and otology; civil engineers; lawyers; law administrators; acousticians; engineers; automobile representatives; Lewis H. Brown, President of the Johns-Manville Corporation,² and the police. Another major actor in the NAC was Dr. Harvey Fletcher the president and founder of the Bell Laboratories research center. Fletcher was also the president of the Acoustic Society of America and a fellow of the Organizations for the Hard of Hearing. The collaboration with Bell Labs might seem strange at first, mainly because many of its inventions were part

of the source of city noise: telephones, radio loud speakers, etc. However, as Emily Thompson (2004) argues:

Although the papers described the organization as an ‘anti-noise’ society, Mrs. Rice emphasised that its efforts would be dedicated to eliminating only unnecessary noises. The society recognised the fact that much noise was simply unavoidable, and its members had no desire to interfere with the vital commerce and business of the city. This emphasis enabled them to enlist the support of business organizations that might otherwise have resisted their efforts. It also tapped into a larger cultural trend that was increasingly valorising the principle of efficiency and its corollary, the elimination of all things unnecessary. (Thompson, 2004: 122)

Although noise was the main (declared) focus of the NAC, there was a lot of flexibility when it came to the definition of ‘unnecessary noise’, especially when it comes to sounds that businesses make. It was not quite an attempt to ‘eliminate all things unnecessary’, as Thompson argues, but rather the reorganization and production of more efficient and, importantly, more economically beneficial sounds. It is important to bear this in mind, and also to consider that Bell Labs and the automobile industries collaborated with the NAC while they were the main sources of noise. Therefore, as will be shown below, the main suggestions of tackling these noises were not directed at these companies, but towards the citizens of the city and their ‘uncivilized’ behavior. As the city started to change its infrastructure and sonic texture, people were becoming a nuisance to the machines and trade zones, especially the unwanted citizens of the city. The objectives of Bell Labs were slightly different, as it indicated in its report:

Since the primary object of this survey was to gather information for telephone studies, the noise was measured in each case near a telephone instrument; and, in any case where a selection of conditions was necessary, it was endeavored to simulate conditions which would obtain when a telephone call was placed. The noise was taken to include any room sounds which would tend to interfere with telephone conversation. (Brown et al., 1930: 154)

Although the NAC’s goal was to measure the city to understand noise sources in different areas, Bell took advantage of this project to advance their business and produce more knowledge. This enabled them to create a database to be used for various products and services. In order to create an understanding of the city’s rhythms the company wanted to know when people did things. Bell conducted **measurements** according to the times of the day that people made most calls,

which were determined by a telephone traffic study conducted earlier. Bell listened to the city by monitoring and measuring various locations with its devices according to its units and produced knowledge about people's times and spaces. It recorded these data and created a database, statistically mapping the city's soundscape. Importantly, Bell established which sounds will be categorized as noise. In an article based on some of the measurements made as part of the NAC operation, Bell researchers argue:

In this joint work, noise is taken to mean any extraneous sound which would tend to interfere with telephone conversation. Room noise is used to include any extraneous sounds at the place where the measurement is made, except those proceeding from the telephone receiver. It thus includes, in addition to noises such as the rattling of papers or the roar of street traffic, any other sounds extraneous to the telephone conversation, for example, those of other conversations or of music produced nearby. (Williams and McCurdy, 1930: 652)

In other words, Bell Labs' main purpose for measuring noise was to understand what sound sources interfered with the telephone system. Specifically, the company wanted to know the place and time the interferences occurred to determine changes of sound rhythms—a statistical measurement of behaviors measured using its devices and units—which could help identify irregularities. Thus, any sound, behavior, or activity that could potentially hinder transmission of conversations on the telephone was categorized as noise. However, not all sounds and activities were classified as noise, and the selective process of producing different sounds and behaviors had its own politics. In this way, several interest groups managed to remix NYC according to new technologies and measuring units, while presenting them as 'objective'.

As part of measuring the city, Bell used its new unit of measuring sound, called the *decibel*, to be measured with two new instruments: the *noise meter* and the *audiometer*, "the former yielding a purely physical measurement, the latter a measurement which involves the organs of hearing of the observer" (Brown et al., 1930: 120). The noise meter consisted of a delicate microphone that converted sound waves into electrical currents, which were amplified and went into an electric meter where a needle showed the intensity of the noise levels. The audiometer contained a phonograph that produced a test tone and required a human ear that came in the shape of Bell engineer **expert** (called the 'observer'), who had his other ear exposed to the city and adjusted the intensity of the tone until it was audible. In this way, the 'observer' knew when his ear was 'masked' (covered by the sound) by the city's noise, it corresponded to a curve called the noise audiogram,

which he observed and reported. Despite being called an ‘observer’, Bell experts had to adjust their bodies to be able to *listen* to the city’s sounds and monitor, detect and make judgments of categorizations that differentiated sound and noise. When comparing the two methods, Bell experts argued that:

The meter method [noise meter], unlike the masking method [audiometer], avoids any errors due to variations in human ears. This advantage is offset to some extent by the fluctuations of the meter needle, which make it difficult to obtain the mean reading if the noise is unsteady as is the case with most room noises. (Williams and McCurdy, 1930: 658)

Here, Bell’s **experts** reflected on the efficiency of each measuring device, while emphasizing that the more automatic method, the one with less human intervention, was more accurate. Despite believing that automating the measuring process is better, this method still had some problems with accuracy, which meant that the human **expert** was still needed to make the **measurement**.

Bell also used the audiometer for speech and hearing tests in collaboration with medical experts. As its experts argued, this instrument was “useful in determining the condition of hearing of individuals by determining the smallest volume of sound at a considerable number of different frequencies which the individual can hear” (Gherardi and Jewett, 1930: 4). The same device was used for **measuring** the ‘bodies’ of both the city *and* the people to determine abnormalities. For both measuring instruments, Bell **experts** had to know, operate, and interpret what they listened to. Importantly, these **experts** rendered the city’s sounds along with people’s behavior into quantitative standard units of what was ‘normal’ (non)human sound and what was ‘unhealthy’ noise.

The *decibel* was the new term Bell Labs gave to the telephone transmission efficiencies and levels unit (Martin, 1929: 1). This unit is a quantification of the ratio of intensities and does not represent an absolute unit. This relativity is established by the positioning of the audiometer’s microphone towards the desired source of sound and the interpretation of the listening of the recorded noises that were made by **expert** engineers from Bell Labs. As with doctors, the learnt expertise of the positioning of the devices determined the condition of the body. The decibel shows the relativity and arbitrariness of this **measuring** technique and points to the construction of power of those who have the expertise to measure, interpret and determine the results—Bell Labs engineers.

Despite this, in the City Noise report the decibel was portrayed as a unit of loudness (Brown et al., 1930). Bell wanted to make its measuring unit—the decibel—the standard unit for measuring and representing sound. As its managers

argued, there was a need “for the standardization of all apparatus, communication systems and operating methods to the extent that such standardization is helpful” (Gherardi and Jewett, 1930: 4). Bell was determined to move their technical discourse outside the engineering world and naturalize it in the everyday life discourse. Just like people today say Google as a phrase to find something in a search engine, Bell too wanted to make sound related concepts as its exclusive descriptor. Bell wanted to **license** its position as the main authority for the production of sound. Bell aimed to take over the discourse of sound and noise, originally meant for their apparatuses, and turn it into the dominant one for any (sonic) representation by using their unit of **measurement**.

Although the decibel faced competing measuring units at the time, such as the *sonne*, the *wien*, and its strongest competitor, the *phone*, Bell managed to surpass these. As Karin Bijsterveld argues:

Research institutions had taken the ICA’s³ standardisation of the units measuring noise seriously, and fostered the embedding of the phone and decibel in material practices, such as measuring instruments and graphs. Within the world of policy, however, talking about noise in terms of decibels eventually won out from expressing noise in phones. Most likely, a widely quoted review of noise surveys presented in decibels, published by Rogers H. Galt who was a Bell Telephone Laboratories employee, may have influenced this outcome. (Bijsterveld, 2008: 108)

Since the NAC’s campaign was presented and discussed in various media such as radio and newspapers, as well as municipality laws, Bell Labs’ collaboration with the NAC promoted their measuring unit as the dominant standard. It also helped establish the company as the main sound authority, thereby promoting its other businesses, which will be discussed below. Harvey Fletcher’s strategic position in the Acoustic Society of America, and fellowship of the Organizations for the Hard of Hearing probably helped to standardize Bell’s decibel unit over the other measuring units.

Mapping City Noise

Human senses have always been a target for manipulations aimed to redraw the boundaries of people and spaces. In the 18th and 19th centuries, strategies of governmentality on air in French and American cities were deployed to produce classes of odours, populations and territories. This was done using technologies of

pavements, drainage and ventilation, which made the city's circulation of goods and people more efficient. More than that, these technologies connected morality to healthy/clean/non-smelly bodies. As Alan Corbin argues, "olfactory⁴ vigilance not only aimed to detect the threat, the risk of infection, but also entailed a permanent monitoring of the dissolution of individuals and the self" (1986: 21). He observes that:

By mapping the flux of smells that made up the olfactory texture of the city, these observers located the networks of miasmas through which epidemics infiltrated the capital. Much later, this new view of urban space gave rise to a fresh reading of society ... Not until the nineteenth century did sanitary reformers use tactics that created a clear distinction between the deodorized bourgeoisie and the foul-smelling masses. (Corbin, 1986: 55)

Mapping cities according to sense taxonomies by using specific technologies and measuring units was also conducted in NYC, a century before the NAC. Melanie Kiechle discusses the 19th-century sanitation reforms in the US. On February 26, 1886, a new public health law was passed in NYC that founded the New York City Metropolitan Board of Health. This board created a stench map of New York and Brooklyn's offensive (unsanitary) trades, trying to locate the sources of the nuisance and move them somewhere else. As Kiechle argues:

Alternative approaches pushed stench to the city's margins through the construction of sewers and relocation of slaughterhouses. Despite the Board of Health's success at changing the city's physical geography, control of the olfactory geography remained elusive. Stench-laden winds created conflict between the residents who trusted their noses and the officials who now determined the definition of fresh air. By the 1870s, conflicts over olfactory geography and knowledge of stench's sources pitted bodily experience against scientific expertise and government authority. (Kiechle, 2015: 2)

According to Kiechle, Dr. John Hoskins Griscom, one of the main advocates of air reforms and a leader of the sanitary movement, initiated a survey of the city's living conditions. This survey led to the *Report of the Council of Hygiene and Public Health of the Citizens' Association of New York upon the Sanitary Condition of the City*. The investigation and report were conducted by physicians and chemists, who functioned as 'competent **experts**' examining each of the 31 designated sections of the city, and creating a thorough and detailed map of odours. The **experts** at that time were building new technologies for water systems (including water pumps), sewers, and canals that sanitized both the water and the air. Only

experts' opinions would matter in legal settings, argues Kiechle, and NYC's Metropolitan Board of Health designated an Inspector of Offensive Trades, chemist Samuel Goldschmidt, to deal with citizens' complaints.

In the 20th century, similar practices were deployed in the same city to produce a noise map that legitimized specific people, commerce, places, technologies and behaviors while de-legitimizing others. Noise **measurements** were given logarithmic numbers in decibels, which meant nothing to most of the population. What it did give them was a new discourse and vocabulary to express their everyday lives, all sponsored by Bell. These figures were calculated to establish an 'average' noise level for various places and machines across the city, while the people who were assigned to determine these 'norms' were Bell Labs engineers.

Together with Johns-Manville and the Department of Health, Bell Labs travelled with a truck all over NYC, and "collected 10,000 measurements at 138 locations" (Thompson, 2004: 158). Bell Labs' measuring machines "permitted the preparation of a 'spot map' of noises, and the quantitative analysis of the intensity from various sources" (City Noise, 1931: 1139). This is also clearly mentioned in the objectives of NYC's Commissioner of Health, who said that:

We need a complete classification of noises; a tabulation of intensity geographically arranged; some scientific measurements of principal city noises, together with specific recommendations as to their control or elimination; We need a scientific statement of the effect of noise on the human being; We should have some scientific measurements of certain types of noises; and recommendations as to what constitutes the border line of reasonable inevitable noise and unreasonable noise. (Brown et al., 1930: 3–4)

It is exactly this 'border line' of what is reasonable and what is unreasonable noise that Bell aimed to construct along with the NAC and according to their economic rationale. As Elden (2010) shows above regarding maps, these were political strategies to produce territories. Such visualizations and quantification of the city's noise and the places where it occurred made it easier to restructure the architecture and consequently the way people behaved in these spaces according to different groups' interests. Specifically, it meant that real estate companies and insulation companies, such as Johns-Manville, could know where and how to develop their businesses according to such maps, and what would need to be restructured to do that.

In NYC, at the end of the 1920s and the beginning of 1930s, some citizens could no longer tolerate the noise and complained, which gave the perfect opportunity for the NAC to intervene and show how much the Commission was

needed in the city. It was also the time of the stock market crash that resulted in one of the largest financial crises of the 20th century. The stock market crash required a reorganization of territories and populations, and media technologies could help with this. As Lana Rakow argues, “[u]rban zoning of residential and industrial areas, popular around the turn of the century, was supported by telephone companies and utilities because the companies were uninterested in business in poor or deteriorating neighbourhoods” (1988: 191–2). A new order was needed.

To understand which noises were more disturbing than others, the NAC conducted a questionnaire. It circulated the questionnaire with the help of NYC’s newspapers and received 11,068 responses. The questionnaire gave a predetermined list of sources that produced noise; all the citizens needed to do was to fill in the area and time of the occurrence. If a citizen wanted to add a source that was not listed in the questionnaire, she would have to write a separate letter and attach it to the questionnaire. In other words, if she thought there were different noise sources or had a different view about it altogether, then she would have to make an effort to report this; that is, a bigger effort than filling out the questionnaire and sending it. Considering the huge numbers of immigrants living in NYC who might have not been able to read or write in English, this questionnaire already excluded the group of people it was going up against.

According to the classifications presented in the questionnaire’s results, it was apparent that most of the sources of NYC noise originated from machines: cars, buses, motorcycles, trains, and radios. Noises produced by people were positioned at the bottom of the list. However, these were the noises that were addressed for control, management and education (as I will show below). The responsibility for causing the noise was placed on the lower social classes or foreigners who needed to be educated and managed. The inventors of the machines mentioned in the questionnaire, including Bell Labs, were exempt from any blame. The automobile industry was encouraged to replace its horns to decrease noise, but their control or elimination was never raised as a policy issue.

More than trying to work out the sources of noise, it seems that the main purpose of the questionnaire was to quantify the sources the NAC had already established as noisy. By doing so, this database enabled the NAC to finally have a tangible number-based ‘scientific’ proof that would consequently help to form legislation and control over these noise sources and practices, be they human or non-human. The quantification of sound finally made it possible to ‘capture’ noise, as an immaterial, elusive form of knowledge. It was possible to render it from its abstract slipperiness into Bell’s quantitative **measurements** and mechanical tools,

and then use it against different groups and behaviors that the NAC found problematic. Bell Labs **experts** tested whether there was a correlation between the noise of each source and the frequency of complaints against this source. They found that:

It can be definitely stated that the level of the noise is not the sole factor which determines its annoyance as measured by the number of complaints. In a broad way, it does seem that a factor combining the noise level and the frequency of occurrence is definitely correlated with the annoyance. However, the degree of annoyance seems to depend at least to an equally great extent upon other factors—possibly the component frequencies and the general character, whether steady or intermittent—and whether or not the noise is commonly regarded as quite unnecessary, such as the squeaking of brakes of automobiles, or as relatively necessary, such as police whistles. (Brown et al., 1930: 147)

Hence, level of noise was only one factor; frequency and how people think about the noise also mattered. People had to be educated on the kinds of noise they should care about, however, even in this example, although automobiles sounds were considered unnecessary, their manufacturers did not receive sanctions, particularly because they were part of the NAC's group of sponsors. Instead, other sources, groups of people and their activities were the target and had to be categorized as noise that was more annoying. As Karin Bijsterveld argues, educating the 'uncivilised population' was the main purpose of the noise abatement:

[S]ound continued to be associated with social distinctions and noise with a lack of manners. Consequently, public education by teaching a 'noise etiquette' came to be seen as the alpha and omega of controlling the city noise problem. Although practical measures such as alternative pavements and new transportation constructions were also proposed and executed, public education continued to be seen as the ultimate way of creating silence: it kept dominating the rhetorics of noise abatement. (Bijsterveld, 2008: 39)

According to Bijsterveld, the solution sought by the NAC was *not* to eliminate various technologies such as radios and automobiles. Rather, the most effective solution was teaching the population that noise was unhealthy, dangerous, and inefficient. This also shows that not all people were aware that they should care about noise; therefore, the Commission felt it had to guide them to establish a new norm. The NAC argued that, one can "see how the vast majority, who are not conscious of the injury being done to them by noise, must be protected

from harmful preventable din by the Authorities responsible for the health of the community” (Brown et al., 1930: 288). In this way, noise was constructed as a source of health issues, and people had to be educated to take better care of their bodies for their own safety, but more importantly, for society and the city.

Part of this education was through **training of the body**. From the very beginning, noise was linked to health problems. These arguments were backed by scientific medical evidence of damage to the mind, emotions, blood pressure, heart rhythm, auditory organs, nervous system, metabolism, sleep, efficiency, and mental well-being. Similar strategies were deployed, as shown above, in the 18th and 19th centuries in French cities concerning the sense of smell. Corbin argues that “[d]eodorization would ensure the appearance of a new body” (1986: 104). By **training their bodies** and self-caring while monitoring their peers to be healthy and clean, new bodies were created, sound subjects clean from noise.

Similar to stench, it was difficult to prove that these injuries were directly caused by noise. Although Bell Labs’ equipment provided tools and a measuring unit to quantify noise, it was not visible or material. Since scientific knowledge production and claims of objectivity and authority were usually made by notions of seeing and vision, sound was more difficult to establish as a viable way of knowing. According to the *American Journal of Public Health*, which addressed the NAC’s operation:

[N]o correlation has been made between these physiological and psychological effects of noise and the data collected in the scientific study of the intensity of noise from various sources. It seems to be impossible, therefore, at present to select an intensity value, or ‘noise level’ which would separate noises of public health significance to the general public and those of no such importance ... In this way, it is not necessary to prove the public health significance of any specific noise or group of noises in order that they may be controlled or eliminated. Hence it is possible in the present state of knowledge to instigate noise control measures. (City Noise, 1931: 1139)

As it was difficult to link physical and psychological damages to the noise **measurements**, all noises became important, thus justifying the kind of action undertaken by the NAC. An even greater power, a **license**, was given to Bell **experts** by not having to justify or ground their arguments with actual proof. More accurately, specific noises mattered, and did not need any proof of direct correlation with health problems or illness in order to control and eliminate them. This ambiguity served those in power to determine and classify which noises were harmful.

The discussions were mostly about the effects of noise on the efficiency of ‘brain’ or mental workers. This meant that noises that affected the higher classes were constructed as unnecessary. Other people, usually from the lower classes who were doing more physical work in factories and were exposed to louder sounds were not presented to be in danger. The sound they were exposed to was not constructed as harmful. As the NAC report suggests:

As to the matter of deafness caused by noise, the committee noted that the structure of the ear makes it continuously adaptable provided these sounds merge and maintain a more or less uniform level. In traffic and many other city noises this is not the case. (Brown et al., 1930: 19)

People from lower classes were presented as more adaptable to such high-level sounds, whereas ‘brain’ workers were more sensitive and not able to experience and adjust to such conditions. As the report argues, it is a “proven fact that, to the busy brain worker, to the sick, the nervous, or the wakeful, noise is a serious menace to which adaptation may be impossible” (Brown et al., 1930: 250). Such brain workers, who worked in offices, were the main examples given in the report of people who suffered from noise. Such ‘brain workers’ worked in offices or in their homes, making the street the prime noise source that affected their efficiency, energy, and fatigue in output. In this way, noise also provided the possibility to control, manage and police forms of commerce, especially unregulated street commerce. It was an opportunity to restructure the new labor force according to the new emerging market the Industrial Revolution introduced.

No Deal on the Street

Part of the NAC’s effort was to combat, among other things, vendors, peddlers, and hucksters, who were people from the lower classes and immigrants trying to sell products on the streets, usually because they could not afford to rent or buy a store. The main problem with these people, according to the NAC, was their selling and advertising practices, which involved going through the streets and shouting to get attention, and hopefully buyers. This ‘inappropriate’ commerce activity infuriated intellectuals who had to work in their homes and felt (sonically) attacked by these ‘barbaric’ advertising techniques.

According to John Picker (2000), this privileged class of Victorian professionals who worked from home wanted to reshape the boundaries of the urban territory’s private and public spaces. Picker argues that “the room itself signified a professional seizure of domestic space, an architectural tactic that encapsulated the oddly

positioned existence of silence-seeking professionals whose living and working spaces overlapped” (2000: 429). This demonstration of power was manifested, according to Picker, through the domestication of the streets, and enforcing silence sensibilities as the correct way to behave across wider urban environments. This was established even before the formation of the NAC by the SSUN, in 1909, in New York City, with a new ordinance:

No peddler, vender, or huckster who plies a trade or calling of whatsoever nature on the streets and thoroughfares of the City of New York shall blow or use, or suffer or permit to be blown upon or used any horn or other instrument, nor make, or suffer or permit to be made, any improper noise tending to disturb the peace and quiet of a neighbourhood. For the purpose of directing attention to his ware, trade, or calling, under a penalty of not more than \$5 for each offence. (1909: 7)

As the ordinance shows, there is a lot of interpretations that can go into what is ‘improper noise’ or disturbance of ‘peace and quiet’. And this is precisely where Bell’s **experts** could intervene and turn their knowledge into the truth discourse. As a direct continuation of the SSUN, the NAC also aimed at controlling the unlicensed sellers who were usually foreigners who could not afford proper stores. This, as Daniel Bluestone argues, is “a decades-old effort by various civic, political, and business interests to conquer the ‘pushcart evil’, regulate street commerce, and extend Progressive Era crusades for a beautiful, clean, and efficient city” (1991: 68). Bluestone examines peddlers and merchants in NYC between 1890 and 1940, and argues that proposals to prohibit merchants from the street were inspired by the ideal of a frictionless transportation in the city, where (poor) people on the street interfered with the growing presence of automobile traffic. Additionally, more important cause was to diminish other forms of social uses of the street including political actions, social gatherings and entertainment. The urban street, Bluestone argues, became a marker for social and economic distinctions.

Furthermore, according to Bluestone, as retail shops and arcades became more popular at the end of the 19th century and the early 20th century among the middle and upper classes, “the streets were left to the growing ranks of the poor in the expanding urban populations ... Hundreds of thousands of poor immigrants familiar with European street markets and anxious to buy as cheaply as possible” (1991: 71). Thus, the ‘profile’ of both the merchants and their customers was poor and foreign. The regulations of the city, argues Bluestone, were designed towards those who did not fit into the legitimate trade practices. Big shopping buildings

that started to dominate public spaces across the city's territory and gather people around consumerism were promoted and these sensibilities would continue on-line, as the next chapters will show.

This is demonstrated by the fact that sound was permitted only in specific centralized spaces for shopping and commerce, specifically upper-class retail shops. In 1922, General George Squier invented Muzak, which was originally meant to deliver music over the telephone, and quickly became functional music for increasing the efficiency of workers in factories, and also for a better shopping experience. In these cases, the music's goal is to create a continuous rhythm that creates a different temporality, stretching the experience of time (whether shopping or work) longer and making it easier and more pleasant. This illustrates the thin (arbitrary) line that determined what kind of sound was legitimate and what constituted noise.

Examining Muzak as functional music, Simon Jones and Thomas Schumacher (1992) argue that it was used as a 'disciplinary technology' in workspaces, especially under the emerging paradigms of Fordism and Taylorism. They argue that the main goal of Muzak was to lift the spirits of workers who were starting to feel tired when they worked and to motivate them to continue being productive. This strategy is a way to combat machine noise by introducing another specially designed and scientifically examined sound. Jones and Schumacher (1992) suggest that Muzak was a method of re-organizing time in factories that created a feeling of movement with the music but restricted and controlled the bodies of the workers. Muzak was a way to conduct rhythmmedia to produce factories—territories—where efficient worker subjects were produced, to increase profits. Further, they argue that:

The deployment of functional music in the factory was part of a general trend toward increased 'social engineering' in industry. The knowledges and discourses of behavioral social science were placed at the service of industry and incorporated directly into the practices of Fordism and Taylorism in the forms of industrial psychology and labor/management studies. Under the gaze of these knowledges, the behavior and consciousness of workers became objects of 'scientific' investigation and observation, to be quantified, categorized, and manipulated. (Jones and Schumacher, 1992: 159)

The (re)ordering of different spaces was part of media companies way to conduct rhythmmedia to 'social-engineer' individuals into more productive workers and consumers. It aimed to produce new, more efficient body rhythms, by **filtering** and excluding those that were non-productive, categorizing them as noise. Muzak

signified a desire to control the efficiency and experience of people in spaces, to push them to behave like productive workers and consuming subjects through a social engineering of their bodies and minds.

While Muzak produced work and consumer subjects, there was a need to get rid of others who interfered with the frictionless operation of the city and the streets. Therefore, even when some merchants did have stores, the way they chose to advertise their products (e.g. putting loudspeakers on the street to call attention to their business) was criticized and attacked. This was part of the NAC's goals for the new organization of the city towards big retail stores and catering for other companies. Radio noises presented a problem of inappropriate advertising by private stores, according to the NAC:

There are two parts to the problem of radio noise; of these the worst and most often complained against is the use of blaring loudspeakers on the street to attract attention or to serve as advertising. Closely allied in this respect with the window buzzers and other racket makers of cheap clothing merchants and auctioneers, the commercial street loudspeakers must be operated at great intensity to be effective ... Protests to the owners were useless; they refused to be reasonable or courteous, maintaining that every man has a right to operate his business and its advertising as he pleased—a specious argument which, if carried to its logical conclusion, would make the city uninhabitable! (Brown et al., 1930: 50)

It seems that this was a case of a clash of cultures and rights; who had the right (then translated to **license**) to advertise, when and in what way. Thus, a legal solution was introduced to solve this dispute. To control shop owners' disturbing loudspeaker advertising practices, a change was made by the NAC in the *Practical Application of Remedies to Sanitary Code*. Similar to the previous laws, this code emphasises ambiguous terms around 'excessive and unusual noise', which left a lot of room for **experts** to intervene and decide what excessive sounds are. A few weeks before that, another amendment was approved, on 20 May 1930, to the *Code of Ordinance*, which indicated the following:

Sec. 13 7. Radios, phonographs and other sound devices. No person shall use or operate, or cause to be used or operated, in front or outside of any building, place or premises, nor in or through any window, doorway or opening of such building, place or premises abutting on or adjacent to a public street or place, any device or apparatus for the amplification of sounds from any radio, phonograph or other sound-making or sound-reproducing device without a permit from the police commissioner therefore, nor in any case within two hundred and fifty feet of a school, court house or church during the hours of school, court or

worship, respectively, nor within two hundred and fifty feet of any hospital or similar institution. (Brown et al., 1930: 52)

This Code suggests that to have a promotion device people needed a **license** provided by the police. Since these media devices were new, there was a need to start outlining their ‘terms of use’, and these laws and permits can be seen as early guidelines of the limits and boundaries of what could be done with these machines. This is a strategy to standardize advertising, a topic which I will elaborate further in the next chapter. In a special article for the *New York Times*, the Health Commissioner of New York City, Dr. Wynne W. Shirley, wrote about the NAC, and flagged how these rules served as tools in the hands of the citizens to monitor and report noisy citizens:

In these two regulations a forceful instrument is put in the hands of New Yorker’s if they will but use it. Only through the constant application of such laws can the public be led to form new ways of public courtesy. Already 110 volunteers have realized this and for a week have devoted eight hours a day of their time to patrolling the city and reporting violations of the ordinance against sidewalk loud-speakers. (Wynne, 1930: 113)

Presented as a ‘forceful instrument’, peer policing was portrayed as power given to citizens. Thus, it was not only the responsibility of the authorities to police city noises; citizens were encouraged to monitor people who were noisy, in a social reporting way, exactly as Foucault described in his work on biopolitics. Foucault emphasized that biopolitics is achieved not only by governing a population but also by the continuous monitoring of one’s peers. In this way, power does not have to be enacted from above but from below and in between people who internalize the legitimate way to behave and discipline their peers. Thus, the **training of bodies** in the city was enacted by the authorities *and* citizens to produce disciplined citizens subjects. In this way, the citizens would be ‘empowered’ to police noisy behaviors and groups of people that interfered with businesses. This was expressed in the section dedicated in the report titled ‘What can we citizens of New York do about noise?’:

If the citizens of New York really wish to do away with unnecessary noise and to reduce to a minimum such noises as are necessary, they can accomplish it if they are willing to take a little trouble. They cannot take the law into their own hands; they must act for the most part through the police. If they are vigilant and have the courage to speak to the offenders and threaten them with an appeal

to the police or the law, and will do their part in helping the officers of the law, they will be surprised to see how rapidly things will improve. It is all a question of public opinion. If that is once aroused we can enforce the laws we have and, if we need others, obtain them. (Brown et al., 1930: 273)

This shows citizens were encouraged to police and threaten their peers when they ‘violated’ noise laws. As not all people were equal, specific groups of people were the target of such policing (this still happens to this day, check #DrivingWhileBlack). It shows how training was important to change the public’s opinion and understanding regarding what was unnecessary noise to encourage people to act and educate others. This was emphasized a few years after the NAC’s report:

Thousands of letters specify the screeching of news vendors, bawling ‘Extra’ at all hours. The shouts of hucksters are anything but musical street cries to the frayed nerves of the populace. The brazen-lunged old-clothes man, whose ‘I-Cash-Clothes’ shatters the peace of the side streets, is frequently complained of. With public cooperation, many of these disturbances may be eliminated ... ‘We’ll never get rid of those until we can change human nature,’ is the net conclusion at City Hall. (Mackenzie, 1935: E12)

It was precisely ‘human nature’ and the way it operated and understood that was the target of the NAC and Bell, and they harnessed every scientific tool and persuasive method they could use to strategically restructure these seemingly natural options in the city. The nature of this ‘human’, however, came from a particular racial identity and socio-economic position. In order to attain status as this ideal ‘human’, people needed to be trained, through education, as well as other norm-establishing practices. The police would give a \$5.00 fine for the violation of such offences of being noisy to educate through an immediate punishment, which they believed would deter more powerfully than harsher actions. This punitive move was accompanied by a collaborative campaign with local radio stations with the goal of educating radio listeners in the appropriate noise etiquette. Radio stations broadcast special announcements for a period of four to six weeks, every night at 10:30, reminding people not to annoy their neighbors and to curb the volume.

This campaign, along with the other educational programs that the Commission set forth, were **training programs** for people to learn about the kinds of noise they should care about, and which they should classify as unnecessary, harmful and uncivilised. As the NAC argued, “many people are thought-less—uncivilised—in its use ... Obviously the fault is not with radio at all, but with people who have not developed their consciousness of the rights of others” (Brown et al.,

1930: 253). The NAC was there to help people learn how to be civilised, how to become good citizens of the city who do not burden or produce excessive noise. Bell's measuring practices enabled producing people and objects behavior according to what they consider to be 'social'. By doing so, they hold a powerful position in producing and ordering people and territories.

Selling (the) Telephone

Producing unwanted forms of commerce and trade came hand in hand with producing other, more appreciated forms of selling. Since noise was portrayed as harmful, unhealthy, and uncivilized, services and products that could prevent or decrease it were developed. It was easier to sell noise-prevention, -reduction, and -elimination products and services since noise became an object. Noise was produced as a commodity, a **measurable** unit, something that could be located to specific objects, or to specific human characteristics and behaviors. This newly-discovered tangible object was a fertile ground to construct new power relations, expand existing ones and, most importantly, monetize them. Now noise could be a quantitative *flexible* unit and, therefore, it could be used to control, manage, govern, and manipulate people. The decibel diffused into everyday discourse to describe experiences most citizens did not understand or grasp the meaning of, or, indeed, how it was being measured. Nevertheless, it became a term to distinguish between legitimate social behaviors and their deviant counterparts.

Thus, establishing noise as a measurable, quantitative and *tangible* thing, also helped Bell to promote both the decibel as the new measuring unit for loudness and its new Acoustic Consulting Service, launched in January 1931. Just as small, cramped places needed to be ventilated to have sufficient sanitary conditions, they would also need to be insulated from noise to ensure they were healthy spaces for living. Thus, this service offered an engineering consultancy for noise abatement and acoustic control:

The instruments and theories developed in the Bell Telephone Laboratories have proven most adequate. Noise analysis and the preparation of specifications for its control has offered a widely diversified field; and nearly every problem has necessitated a different application of engineering principles. (Wolf, 1931: 191)

As each new noise problem was created or found, a new service was developed by Bell, whereby only its **experts** were qualified to locate, measure, analyze, categorize, and handle the situation. In this way, Bell gave itself the **license** to 'solve' the problem of noise which it helped create. Carolyn Marvin, who wrote extensively

about electrical engineers proliferating power during the end of the 19th century, argues that “[t]heir job was to engineer, promote, improve, maintain, and repair the emerging technical infrastructure in the image of an existing distribution of power” (1988: 9). Bell engineers’ expertise and **measuring** devices meant that they had the exclusive **license** to provide solutions and safety against noise.

During this period, some salesmen had specific territories where they went door-to-door at customer’s houses, and Bell, in an attempt to encourage usage of the telephone, wanted to make clear that the telephone could help them manage their customer relations. As Bell emphasized, this could be done by making appointments via the telephone, maintaining constant contact with customers between sales and enabling salesmen to preserve these relationships (and therefore their territories), no matter what physical problem they might have (if they were injured or sick, for example). Thus, at the end of the 1920s, Bell had started to produce the *Key Town Telephone Sales Maps*, which were basically sales territories and the telephone fares:

All of the Bell operating companies have prepared key town sales maps of the states in their territories, available for the use of sales executives. In addition, there is available a Key Town Telephone Sales Map of the United States showing all primary calling area boundaries, and all primary and secondary calling points, as well as a large proportion of the cities having one thousand or more population. The key town designations and area lines have been shown in red to make the map easier to use in plotting sales territories. These maps are one of the aids furnished to facilitate the use of the key town plan, and, therefore, to further the use of toll service, making its use easier and more convenient for customers. (Whitcomb, 1929: 53–5)

These maps helped companies see how the telephone was a valuable and necessary tool for making business, while taking advantage of the different territories of the city. The maps showed the telephone price rates of each region, the average cost of a call in the area, and primary and secondary calling points. The towns shown on the maps were selected by their high proximity to trade territories, their central locations, transportation availability, hotels, and every other criterion that mattered for making efficient sales. In this way, Bell wanted to organize itself in relation to already successful architectures to ‘ride on their backs’ and monetize their success while also creating new spatial and temporal organizations. From Bell’s point of view, department stores were of great interest because people used telephones to purchase products from them (the department stores):

Most important in the list of telephone-merchants are the large retail stores in our big cities. It is not uncommon for them to have twenty, thirty, or even more sales people in constant attendance to handle telephone orders and inquiries, besides making great use of the telephone for other purposes. (Shaw, 1933: 115–16)

Therefore, Bell’s involvement with the NAC fulfilled another goal they both shared: to get rid of street commerce (pushcarts and vendors) in favour of retail stores. These stores indirectly helped to advertise the telephone company as well, as they encouraged their customers to make purchases over the telephone. Therefore, Bell started what it called *co-operative advertising*, which helped both the stores and the telephone company to increase their respective sales. Bell tried to convince people to buy from retail stores while using the telephone: “the telephone company is attempting to aid the formulating process by telling the readers of this same newspaper why they should shop by telephone. But it does so in a still small voice as compared with the thunderous tones in which the stores themselves talk to the shoppers” (Shaw, 1933: 117). Bell tried to make these ads look natural (or ‘organic’, as Facebook terms it—see Chapter 5), not directly saying that people should use their devices and services but subtly nudging.

At the same time, Bell insinuated that merchants should promote their services by clearly indicating their phone numbers in their newspaper ads—a strategy that it argued would increase sales. In this way, Bell aimed its advertisements at both consumers and merchants, while giving priority to big retailers and wealthy people who already had phones. It wanted to train them to adopt new trade practices that would emphasize the need to use the telephone to buy products, to produce new consumers and advertisers. One of these ads was called *Shop by Telephone*:

Do you know this woman, Mr. Merchant? How fond she is of ease and comfort. How alive she is to new ideas—how quick to cast aside old ways. How keen she is to recognize bargains—how immediate her response to them. How ready she is to patronize those who do business in the way she likes to do it. If you know this woman, you know that the telephone has become a part of her very life. If you know this woman, you will keep your telephone number ever before her, as a constant reminder that you are always at her elbow. It will pay you to tell her, when you talk to her or advertise to her, how welcome she is when she comes to you by telephone. (Shaw, 1933: 118)

It was exactly persuading people to make the telephone ‘a part of their life’, as the ad claimed had already happened with the woman in the illustration. This was

Bell's aim, to produce the telephone apparatus and services as part of people's lives and relations with other people and services. During the 1930s, Bell conducted several experiments in collaboration with department stores which showed how sales increased when using the telephone for trade. These findings were accompanied by advice that encouraged the advertisers of these stores to understand the importance of selling over the telephone in order for them to show telephone numbers more explicitly and prominently in their newspaper ads (similar strategies would be used with Facebook and the 'Like' button—see Chapter 5). Furthermore, other recommendations on how they should help advertise the telephone were by:

[A]ccurately and completely listing and advertising the store telephone numbers in the telephone directory, featuring the telephone number in their newspaper advertisements, printing it on letterheads and bills and inserts, announcing it during promotional radio broadcasts, and publicising it in every practical way. (Gay, 1938: 180)

In doing so, Bell was intervening in advertising practices while, at the same time, promoting and trying to standardize the telephone by aiming to integrate it into people's lives. In addition, retail stores' sales data could help Bell discover new markets, relying on the shopping habits of people, which indicated where wealthy consumers were and how they behave. Therefore, Bell analyzed the 1930 U.S. Census, which helped it determine which territories were more profitable and, therefore, worth its investment:

Whether a trade territory measures the area within which there is an effective demand for a given product or whether it merely represents the limits which present organization permits a firm to cover, knowledge of where the majority of the sales are made is useful in furthering the use of communication facilities in the sale of merchandise. (Bolles, 1933: 277)

Diminishing unlicensed street commerce was part of Bell's strategic move to persuade companies that using the telephone as a main device for selling could lower operating costs and establish more efficient organization and distribution. This attempt to promote new services should be understood in light of the financial crisis after the 1929 stock market crash, which Bell experienced quite harshly. Lana Rakow argues that this forced Bell to change its business strategy: "[t]he shrinkage of the number of telephones in service during the Depression led Bell Telephone to expand its marketing approaches to include encouraging the social use of the

telephone, a use the exchanges had seemed to frown on until then” (1988: 191). As will be shown below, Bell was competing with other smaller and independent companies, but wanted to brand itself as a prestigious service and product through its telephone operators. Portrayed as objects of desire, telephone operators were first marketed to business men, but the crisis meant that Bell needed to expand its marketing to more social and everyday use of the telephone, appealing to a wider audience.

Furthermore, according to Gertner, “[i]n the course of three years, between 1930–1933, more than 2.5 million households, most of them Bell subscribers, disconnected from the phone grid. In 1932 alone, the number of telephones with Bell service dropped by 1.65 million” (2012: 36). Only in the mid-1930s did the situation improve, with increasing numbers of phone subscribers and company revenues. Therefore, these strategic moves were meant to expand Bell’s ability to make some kind of profit from its skills and equipment, and integrate and shape its position and discourse as a vital necessity for society.

Shutting Street Noise

The urban soundscape is also structured by the architecture of the city, and places such as Union Square in NYC went through various orderings at the end of the 19th century and the beginning of 20th century. According to Joanna Merwood-Salisbury (2009), Union Square went through major architectural changes during that time that were influenced by political and economic factors:

From 1900 until 1930 Union Square was torn up piece by piece to make way for two subway lines and a concourse connecting them, as the municipal government, in partnership with private companies, constructed a unified underground rapid transit system. During these years the proposed reconstruction of the square was a contentious issue. (Merwood-Salisbury, 2009: 550)

According to Merwood-Salisbury, Union Square, as part of NYC’s unregulated acceleration of industry competition, accommodated many of the first union demonstrations and rallies, e.g. the Socialist International Workers of the World (known as the ‘Wobblies’ and founded in 1905). These masses did not gather in an orderly manner, which was something the municipality and interest groups (such as real-estate owners and shopping centers) feared. Therefore, there was an attempt to **de-politicize** Union Square in order to control the crowd, and to maintain the interests of property owners, real estate companies, and businessmen who owned the newly built surrounding trade centres.

The remodelled Union Square was designed by the Parks Department landscape architect Julius V. Burgevin, and it embodied, according to Merwood-Salisbury (2009), a historical territory. It demonstrated national political values rather than its previous space for political gatherings, workers' activism, and demonstrations. She says that in the age of the New Deal, the need for a visible civic center no longer seemed important. Public space was considered chiefly as a contributor to individual good health, not as a venue for mass democratic action (Merwood-Salisbury, 2009: 554). However, crowding that occurred in the big retail stores was allowed, and even encouraged. By conducting rhythmmedia, a specific kind of crowding was produced as the legitimate, while the others were prohibited. This, again, was a strategy that was deployed in French cities, what Corbin calls an 'uncrowding' of places that were the main focus of sanitary reformers and allowed better control and regulation over populations. Corbin argues that:

Uncrowding people and instituting a new division of the amenities of urban space were deemed effective means of achieving ventilation, controlling the flow of exhalations, and damming up the morbidic effect of social emanations. The crowding together of bodies was a constant challenge to natural equilibrium and called for a sanitary administration capable of establishing regulative norms. Those considering the problem of the distribution of space gave an essential role to smell. The body's spatial requirements were to be determined by measurement of exhalations. And the necessary spacing were to be governed by the forms of sensory intolerance we have already noted. (Corbin, 1986: 100)

Ventilation, according to Corbin, was not enough. Human behavior had to be changed, especially those spontaneous practices of mass gatherings that were perceived as particularly dangerous. There was a need for less chaos, more uniformity through **training of the body**, by reproducing a new body, a civilized self-monitoring body that at the same time monitored its surrounding, that would be more suitable to the new city.

Controlling (the Other) Street Rhythm

The education campaign that the NAC promoted across NYC was initiated was meant for those whose behavior was perceived as problematic, especially the African-Americans in Harlem. According to Clare Corbould (2007), Harlem's street life was presented in a very noisy way by the white media of NYC in the first half of the 20th century. She argues that:

Harlem—or “Little Africa”—was special, according to these authors, because its sound reflected a primitive “rhythm of life,” characteristic of those they deemed racially inferior. African Americans heard the noise, or sound, of Harlem, rather differently. To them, it indicated a distinctive and valuable culture. (Corbould, 2007: 861)

NYC, according to Corbould, attracted many foreign-born blacks, especially between 1913 and 1924,⁵ when she argues, their numbers were the highest and saw the city as the second most popular state in which to live. Corbould argues that, for African-Americans, the streets were a space that embodied the opportunity to break the white upper classes’ notions of private and public. They created their own interpretation of noise, including making noises from open windows towards the streets (by listening to the radio). Black Americans also ran alternative businesses such as ‘rent parties’ and ‘buffet flats’, which were basically bars in private houses. Reclaiming the city’s noise, especially in Harlem, the ‘Mecca of the New Negro’, as Corbould calls it, was a way for African-Americans to claim a physical space that was not theirs. After all, they could not participate in all the leisure activities that white people took part in (bars, films, theatre, etc.), let alone be a part of the legitimate licensed businesses. Therefore, as Corbould argues:

To hear, rather than see, was at once to pose a separate mode of existence, connected to a separate public sphere and a different history. Black Americans quite simply defined themselves using a different sensual tradition than that commonly associated with whites, that is, sound rather than sight. For many, the arena of sound offered more room for self-definition than did the field of vision, with its close relationship to the determination of a person’s race. (Corbould, 2007: 872)

Sound allows us to redraw, challenge and reconstruct boundaries of space, body, and, agency. It enabled black people in NYC to create their own subjectivity. This is important to amplify because as we saw with our discussion of Foucault previously, these attempts to create specific subjects are not adopted automatically and there is always resistance. As Corbould argues, African-American actions were a form of civil disobedience, as the noise they created hurt and undermined the values of the white elite. Therefore, as she suggests, such actions can be understood as a direct political act that allowed for self-expression and subjectivities that were not allowed in the visual politics of the city.

Such practices, and especially jazz music, was created by Black Americans, were constructed as irrational and, therefore, noisy. As the NAC report mentions,

jazz-minded people are “people who can think on a subject only long enough to speak a sentence or two and then must leap on to the next subject helter-skelter like the motifs in a jazz medley” (Brown et al., 1930: 219). By refusing to acknowledge the organization of NYC’s soundscape, Black Americans refused to correct their behaviors to the rational and civilised ‘white’ body. They composed their own rhythm.

This disobedience made its (sonic) mark as Bell’s recommendations in the report of the NAC were directed exactly towards such street activities and aimed to restrict noise that was produced during the night, and in residential areas of the city, more harshly. The NAC produced a list of problematic people and practices along with recommendations on how to behave properly in the streets, with the title of ‘Etiquette for the Street’. It expressed its concern as:

‘[T]he people upstairs’ in many parts of town seem always to be staging gay parties with much music, dancing, and laughter; that youths and maidens grouped on front stoops sing in close harmony at unreasonable hours of the night; that brakes squeak; that horns toot; that street cars rumble; that ash cans clatter; that exhaust cut-outs roar; that traffic whistles set folks’ nerves on edge—all this makes a clear sketch of what and where and when the noise of New York exists. (Brown et al., 1930: 217)

As this segment shows, the collaboration of the NAC with Bell echoed racial and economic discrimination. Bell considered Black Americans and foreigners as noise, interferences with its business. For Bell, it was “obvious that all classes of people are not equally important as present and prospective users of the telephone service ... [N]ative whites constitute a better market than Negroes or the foreign born, while social and economic differences also have an important bearing upon telephone usage. Thus, the composition and characteristics of the population are of more interest to the telephone industry than mere numbers” (Tomblen, 1932: 50). Trying to produce its elite brand, Bell argued that it valued quality over quantity of the kind of people who used its technology and services. The telephone was designed for particular class and race of people.

In this way, the NAC tried to establish a biopolitical demarcation of what the body and mind were allowed and not allowed to do. In doing so, it wanted to prescribe a particular order that suited its goals. In other words, anyone who was not white, American, healthy, wealthy, and preferably male, was a noise factor in the smooth transmission of conversation over the telephone. This view was subtly enforced by the establishment of good use of the telephone by the correct pronunciation of English. The correct use of the English language was a symbol of good manners and good education:

Speakers have become aware that the human voice is on trial everywhere. Speech itself has thus been advertised in an inescapable way by its newer transmission agencies, and a tremendous impetus has been given to the activities that are promoting better speech ... The reason for this is the fundamental one that better speech means better telephone service. A familiar expression of this interest is the educational effort that calls attention to the value of distinct enunciation and explains how telephone facilities can best be used. (Banning, 1930: 76)

Pronunciation and better speech were a perfect way to exclude anyone who was not the ideal telephone user (described above). By establishing any deviation from this ‘average’ normal as noise, Bell and the NAC could structure the perfect model of bodies and behaviors to which everyone else should adjust. Since there was an abundance of noises, many of which came from media technologies invented by or commercially associated with Bell Labs, it was crucial to construct the notion that these particular noises were necessary for the city, while others deemed as deviant were not. Whereas it proved challenging to train the general populous in the ‘correct’ way to speak, Bell workers, and specifically its switchboard telephone operators, were easier to train. The training programs that the operators went through in the 1930s and 1940s will be examined here below.

Quieting Noisy Women

This section focuses on the women who worked for Bell during the 1930s and 1940s as switchboard telephone operators,⁶ and the training programs the company developed for them to achieve good telephone usage. Focusing on Bell’s operators and the training programs they undertook in the 1930s and 1940s, this section shows how standards of behavior were established to produce operators who were efficient objects, part of the machines. Imagining humans and machines as similar systems was inspired by cybernetics, which started to gain more attention at the end of the 1940s. Cybernetics is an approach that takes its name from the Greek word ‘kybernân’ meaning ‘to steer’ or ‘to govern’, which was its main focus: control and communication of animal and machine systems.

Cybernetics’ main figures came from Bell, who saw the human nervous system as a machine, and vice versa. As David Tomas argues, the “power of cybernetics’ analogical logic resided in the fact that it was able to redefine the concept of ‘life’ itself in order to bring it in line with *cybernetic* automaton’s operational characteristics” (Tomas, 1995: 25, emphasis in original). The idea that the cybernetics put forward was to fuse the boundaries of what was previously considered to be

two separate entities: humans and machines. As this section will show, this idea inspired Bell to create training programs to transform their telephone operators into machines through their bodies, movements, and affect. The transition to the telephone's dial automation, which delegated operators' work to machines, provided an inspiration for the development of cybernetics. The automation of their work, which was led by promoting a design that feeling like 'real-time' will later become a key business strategy to hide decision-making behind processes that produce the distinction between the norm and the deviant.

Connecting Bodies

In the first decades of the telephone, in order to make a connection between subscribers, a manual mediator in the form of a telephone switchboard operator was needed. These positions were first given to boys because they were both cheap labor and bodily adjusted to conduct physically difficult tasks. Being boys, they were thought to be suitable to work with technology. These boys started to work for Bell at the age of 13, but the company quickly discovered that during their work they were rude and pranksters, who did not listen to or obey to their superiors. They would swear over the phone if they were upset, and even threaten to punch customers and cause other bodily injuries. John Carty, who was one of those boys in a telephone office in Boston, confessed in Bell's documentation of those years that:

They were very poor operators,' he once declared. 'They were not old enough to be talked to like men and they were not young enough to be spanked like children. I shall never forget the noise that was made by those young fellows. (Barrett, 1935: 46)

The first telephone operator was Miss Emma Nutt, who was employed in 1878 by Alexander Graham Bell and opened the way to what would become, by the 1880s, a women's only domain. According to Venus Green, in those years, the service that telephone operators offered helped to preserve social classes, because Bell "presented telephone operators as a group of 'compliant' girls who catered to the subscribers' needs just as a personal servant would" (Green, 1995: 914). As valuable components in the economic growth of Bell, their fine tuning was essential.

The contribution of women to the development of media technologies is barely recognized in historical accounts. For example, Bernhard Siegert (1998), argues that women have been excluded from media histories. Hiring women for

telephone operator positions happened for various reasons; according to Siegart, it was “[b]ecause the frequency range of a woman’s voice was more completely encompassed by the frequency band transmitted by the telephone (originally 1,000 to 1,500 hz, after the introduction of the first intermediate amplifier to 2,000 hz, since 1929 to 2,400 hz)” (1998: 87). Therefore, according to Siegart, women’s voices were a better utility for the position of the telephone operator. As a German materialist media scholar, Siegart tends to use a ‘cold-gaze’ when examining media, and neglects to examine other factors.

Michèle Martin, on the other hand, argues that one of the main reasons women were chosen to be operators was that such training was only successful when applied to women and not to the male operators, who rejected it and would not agree to change their behavior. Unlike women, men had other employment options and could just leave and find other jobs relatively easy (unless the color of their skin was also considered deviant). Martin argues that the operators functioned as ‘mediating’ elements in the making of telephone communication. However, she says that:

[T]elephone operators were placed in a paradoxical situation: they represented both a necessary element in and an obstacle to the production of instantaneous private interactive communication. Before the adoption of the automatic switchboard, they were essential to making connections between subscribers, but, as ‘human mediators’ whose activities could delay or intrude on the privacy of telephone calls, they were obstacles to the development of the telephone service sought by the companies. The telephone companies attempted to produce operators with particular habits, skills, and attitudes. (Martin, 1991: 50)

Martin emphasizes privacy as a factor that could be interrupted by the telephone operators; however, every aspect of their behavior could potentially become a noise factor, because they were *part of the communication channel*. Their correct behavior was essential to the smooth and frictionless communication between subscribers. Therefore, their bodies and minds were designed and managed like the rest of the media apparatus invented by Bell. Their femininity, adds Martin, was used by the telephone company to sell the telephone service in what she terms a ‘labor of love’. Similarly, in Italy’s early telephone days, operators “became objects of sexual desire, but they were also considered women of easy virtue; they seemed to embody the figure of the new emancipated woman but also symbolised the inefficiency of *the manual* compared to the efficiency of *the automatic*” (Balbi, 2013: 71). Just like today, women who worked in technology held the dual position of being progressive and yet not good enough; until men took over their jobs

their work was presented as replaceable (also check Hicks, 2017). It is the labor of affect, the 'sexy-servant' that answers all your needs that made the operators a manual service that was worth more than automatic.

According to Lana Rakow (1988), it was not only the fact that women were more polite and well-mannered that made Bell and other telephone companies across the world hire them—they were also cheap labor. Women operators were thus objects of desire, but at the same time, they were more efficient and desirable economically compared to their male counterparts. Bell wanted to maximize these objects' usefulness by standardizing, moulding, controlling, and managing them according to its needs, just as it did with its inventions. Operators and the telephone were mentioned and treated interchangeably from a very early stage. These women were perceived as part of the telephone's inherent characteristics. As Marvin argues in her examination of electrical communication journals in the late 19th century:

Much of the romantic poetry featured as light filler in electrical journals metaphorically identified women with technological objects, both of them properly under male control ... Both the women and the telephone were 'inventions' second only to man himself. Sent down to please man, both woman and the telephone were mistaken for toys and turned out to be necessities. (Marvin, 1988: 29)

These women were treated as tools, objects that could be adjusted, modified, tailored, and managed for the sake of better communication and, as a result, for greater profit. During the 1930s and 1940s, Bell developed training programs for its operators, which showed an attempt to enact power and control over every aspect of their lives. These training programs had been an ongoing project since 1900; however, the two decades discussed here represent a deeper intrusion into female operators' bodies and minds both inside *and* outside of the workplace. By doing so, Bell developed and expanded its processed listening capacities to listen to their operators' lives and then shape them in a particular rhythmmedia yielding more value to the company.

Bell's belief in telephone operators as a vital element in its telephone system is shown by its insistence on keeping them as humans elements despite automatic switching devices (also called 'dial') being invented as far back as 1891, by Almon Strowger. The invention was quickly adopted by small independent telephone companies, but only slowly adopted by Bell from the 1920s (John, 2010: 383). By the end of the 1940s, three-quarters of Bell's subscribers were using automatic dial systems but telephone operators were still employed, mainly to maintain a

competitive advantage over the company's rivals (Lipartito, 1994: 1084). Part of this approach was influenced by Bell's disbelief that people could be trusted to use the dial telephone correctly. The automatic switching machine was considered to be a much more complicated system to operate and, therefore, was less reliable, especially in big cities. It also required high skill proficiencies from people to operate it. "Corporate management had long believed that customers were bumbling amateurs; perhaps it was best after all to continue to rely on the expert skills of the trained technician, the operator" (Lipartito, 1994: 1105). Subscribers were more difficult to control, whereas training programs could be deployed directly to discipline the operators, who were treated as the company's own possessions to be re-designed and managed under rigid and intrusive measures.

Designing the Communication Line Model

The training school for operators began in January 1902 and was founded by the management of the Metropolitan Telephone and Telegraph Company (later the New York Telephone Company) and managed by one of the first operators, Miss Katherine Schmitt. The realization that a training regimen needed to be established came after the increased use of the telephone and, consequently, the need for more skilled women who could handle the rhythm of high traffic with efficiency and standardized manner. In the beginning, it was "the 'survival of the fittest'—the operator with the most lung power got things done" (Barrett, 1935: 116). This is mainly because the equipment was heavy and clunky, so the fast movements that the work required demanded incredible physical effort. In addition, as the equipment was at its infancy the operators would also get frequently electrocuted when connecting the chords into the switchboards. Therefore, the physical and mental health of the operators were essential to their acceptance and survival of the job.

After going through physical check-ups that assured their bodies, eyesight, hearing and voice were suitable for the position, these women took voice and pronunciation lessons. From an early stage, operators had to be trained to have a high proficiency of hearing and speaking: "Particular care is taken to impart such training as will result in clear enunciation and accurate hearing; and an ingenious arrangement has recently been produced for developing the hearing of students" (LaChance, 1931: 16). The 'Voice with the Smile', Bell's famous slogan, was acquired through strict body adjustments, which included shaping "the use of the tongue, lips, jaws, and posture that would result in proper pronunciation and a tone of eager friendliness" (Cooper, 1997: 492). Designing the perfect voice was

important because it was the interface between subscribers and the telephone and was meant to provide a pleasing and frictionless experience. Therefore, to ensure an efficient transmission, it had to be clear, concise and embody the 'tone of service'. In this way, Bell shaped and managed women's bodies, voices and movements towards a rhythm that produced efficiency and at the same time labor of care and emotion. Such rhythmmedia consequently led to more profit.

In the training schools, after a short explanation on the functionality of the switchboard, operators were put to work 'learning by doing', familiarizing themselves with the atmosphere of 'real-time' work. Managing and monitoring operators' actions were tasks carried out by their supervisors but also by the operators themselves. Moreover, there was a deportment card to report the transgressions of operators, who were not allowed to cross their legs, and had to ask permission to blow their noses or wipe their brows. According to Kenneth Lipartito:

[T]elephone companies encouraged operators to fill 'scrapbooks' with material bearing on accuracy in work and personal improvement, awarding prizes for the best efforts. The purpose of such policies was to create workers willing to perform their tasks hour in, hour out and to cooperate with their machines as well as their fellow workers. As Katherine Schmitt, Bell's first female supervisor, succinctly remarked, 'the operator must be a paragon of perfection, a kind of human machine'. (Lipartito, 1994: 1088)

Through various body training, psychological manipulations and financial incentives operators were under constant process of being produced as machinic subjects. Inspired by Frederick Taylor's scientific management approach, Bell broke down the operating service into distinct repetitive stages. It aimed to re-assemble and standardize the movements to produce the optimized operator, while putting strong emphasis on repetitive sequence speed. But the company also wanted to reduce the anger of subscribers who were promised and therefore expected a fast and reliable communication device. Bell wanted to produce operators' behavior into a machine rhythm, to save time and, consequently, money. Breaking and dividing their work into many elements 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)

After conducting processed listening by monitoring operators’ movements, Bell categorized what were the ones which harmed the system as noise. This knowledge then was fed into training programs which focused on repetitive movements to reorganized their bodies in a rhythmedia that was economically beneficial to the company. As Jill Cooper 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” (Cooper, 1997: 495). In this way, both operators’ engineering skills and affective labor were constantly measured and categorized to then re-ordered through repetitive movements for a better service. So although the operators’ work was physically and emotionally damaging, “[e]fficiency records were kept for each operator and were reflected in her pay” (Ibid). According to Stephen Norwood (1990), slow reactions, disconnections, or unanswered calls were followed by punishments, such as lower salaries, unattractive shifts, or suspension from work. Norwood observes that:

Management believed scrutiny of the operator’s performance to be ‘analogous to the inspection of the product of the factory, telephone service being the product in our case.’ Engineers responsible for methods and standards devised operating rules and techniques ‘to give the best possible service with maximum efficiency ... under all conditions.’ To determine ‘proper standards’ for operators’ work load—that is, the number of calls an operator was to handle each hour—the engineers used stop watches to time each step of a call ‘to the exact second’. (Norwood, 1990: 36)

Bell engineers developed statistical measures to establish behavioral norms for operators to obey. Technological improvements to the switchboard meant that less effort had to be made to complete each call; however, it also increased the work pace expected from the operators (Lipartito, 1994: 1100). Bell’s operators were expected to answer or disconnect calls within a 3.5-second average (Green, 1995: 933). Thus, statistics opened new opportunities to govern and manage operators in the name of efficiency and profit. Bell’s **measurements** of operators’

motions were designed to construct the most (cost-) efficient norm, but they simultaneously established what were the irregular, deviant, and anomalous behaviors. Noise, in this sense, took the form of physical malfunction: fatigue, injuries, or mental instability. German operators, who were employed by the Reichspostministerium (RPM), also experienced ailments and exhaustion from the fast tempo of their work:

Medical and industrial experts, physiologists, and experimental psychologists weighed in on the subject of the so-called *Fräulein von Amt*, examining the effects of switchboard work on her body, senses, and psyche and exploring her sexual behavior, her attitudes toward marriage, and her leisure activities. Operators became emblematic figures of the German discourse on technological modernity and its discontents. (Killen, 2006: 163)

Like their American counterparts, German operators went through medical examinations where their bodies and performance were listened to and measured statistically. While the training programs intruded their bodies and minds, the job they conducted enabled them to earn their own money and independence. This new configuration, then, threatened the morality of society, or more precisely—of the men who governed it. During the second decade of the 20th century, scientific management, Taylorism, and Fordism were imported from the United States, along with strict surveillance and discipline methods deployed on the operators' service, workspace, speed, and time.

The connection between Bell and the RPM was the German psychologist Hugo Münsterberg, who developed tests inspired by Taylor for both companies. Münsterberg used operators to examine adaptation problems to the new rhythms of the workplace to maximize performance (Killen, 2006: 194). Psychotechnician Fritz Giese refined Taylor and Münsterberg's approaches by asserting that German work science "should augment them with a concern for the 'whole person,' body and mind" (Killen, 2006: 198). In 1919, the RPM invited Giese to examine its employees, as he was particularly interested in the operators' free time such as daydreaming, sexual stimuli, film-going and 'moral character'. He analyzed operators along with **measurements** of their attitudes, response times and attention, and produced regularity curves. According to Killen, Giese divided operators' work into almost 20 different procedures of switchboard work:

Each element engaged a different combination of the operator's mental and sensory faculties: hearing, vision, attention, and memory. Giese calculated the time necessary to perform these tasks and the psychophysical profile associated with

each. Out of these calculations he created norms for selecting candidates and for improving the efficiency of those already employed. (Killen, 2006: 196–7)

Operators' body rhythms both inside *and* outside the workplace were tuned and accelerated according to Bell's needs. Conceiving operators' bodies as thermodynamic systems, Giese designed fitness programs, or, as he called it, 'Taylorization of the body', which strengthened operators' bodies and, consequently, optimized them. These physical training programs, which were a fusion of Taylorism and gymnastics, as Killen argues, were meant to **train operators' bodies** to the new rhythm of the workplace. Although Killen argues that Giese designed special training programs, these are not discussed and his operation did not last past the end of the 1920s. Nevertheless, it is significant to show how ideas about training operators and even cybernetics preceded Bell's venture in Germany.

Personal Immediacy

The financial crisis following the 1929 stock market crash, as mentioned above, had huge consequences for Bell. Along with creating new consultancy services for noise reduction, one of the company's responses was to emphasize the service aspect of its business, attempting to make it as pleasing as possible. At the same time, as Green argues, to save money, Bell conducted several measures such as increasing the workloads of operators and employing former operators on a part-time basis, which enabled the company to save on training new ones and increase productivity due their experience with high-traffic work. But it also helped Bell to disguise the fact that it wanted to slowly move to automatic dial machines, and the crisis helped it in rationalizing workforce reductions. As Green observes:

After 1929, however, the rate of dial conversions continued, but the number of traffic employees declined. Between 1929 and 1939, more than 60,000 Bell System traffic employees lost their jobs, while the percentage of dial conversions more than doubled from 26.6 percent to 55.7 percent. As conversions stabilized and the nation economy recovered slightly, operating forces temporarily increased in 1937. When dial conversions accelerated during the 1937–38 recession, the number of operators fell again. Regardless of Bell System attestations to the contrary, the purpose and the effect of the dial conversion eliminated operators. (Green, 2001: 161)

Green argues that the conversion to dial was opposed by subscribers, congress and labor organizations, which led US Secretary of Labor William N. Doak to

establish a committee to investigate unemployment caused by technology in August 1931. Since Bell operated as a public utility, it was under more public criticism regarding its employment and economic practices. Bell distorted several facts about its employment practices, as it did not say that it saved money by not paying for extra hours, by cutting many jobs down to part time and downgrading many employers' positions and salaries, as well as withholding job promotion.

After the Depression, argues Green, Bell clung to the notion that the technological displacement introduced by the dial was a natural progress. Such progress could be justified by the expense of the low-paying jobs of the operators compared to their male counterparts who worked for Bell. Men's jobs were mostly kept and management was more willing to hear their union's demands. Despite dial conversion, men's work was untouched because they could be re-trained. This was one of the first occasions of tensions and struggles around automation of work, and the way big media companies exploit their workers to then replace them by machines. It shows the gendered politics of whose rhythm can be made redundant and removed from the system.

Only in the mid-1930s did the situation improve, with increasing subscribers and company revenues. However, when WW2 broke out in 1939, the opposite situation occurred: there was high demand but the company could not support all of the requests, which resulted in many angry customers. Therefore, Bell's strategic moves were meant to expand its ability to make a profit from its staff and equipment and shape its position as a necessary service for all ranks of society.

Another reason for the transition in the approach of Bell from the 1930s to the 1940s came after the company had realized that it needed to increase sales, which consequently led to it investing in the development of more types of service. According to Hanson (1983), during the 1920s and 1930s, most of Bell Laboratories' "work was focused on designing better telephone sets by considering the physical dimensions of customers' heads and hands and on understanding the properties of the human ear and voice so that electrical transducers and circuits could be improved. It was in this second era, known as psychoacoustics, that behavioral science was formally instituted at Bell Laboratories" (Hanson, 1983: 1573).

This second era that Hanson mentions was the 1940s, when customers' needs started to be at the core of Bell's concerns. Hanson argues that another path, in what he phrases 'human factors', arose from the needs and qualifications of the employees, which brought the 'pure' behavioral research into the organization along with practical activities. Thus, Bell started to employ experimental

psychologists, such as Walter A. Shewhart⁷ and John E. Karlin,⁸ who formed the User Preferences Research department in the mid-1940s.

As a consequence of this approach, during the 1940s, Bell started to dedicate more resources to various training programs for better telephone service. This was mainly because the company felt that the technical aspect of the telephone device had reached a stage where only minor improvements could be made:

The marked improvement in the technical phases of telephone service during the past ten years has left less room for improvements in this field than there has been in the past. While further technical advances will continue to be made, the greatest immediate opportunity for service betterment lies in the broad field of making the service more pleasing and more personal for the customer. (Prescott, 1940: 95)

This user experience approach also brought the notion that, if Bell wanted to sell the telephone service, it must be enjoyable, gratifying, and attractive. This could be achieved by the operators, who could fulfill all these criteria, using them as an instrument of communication, a pleasing (selling) machine. This approach can clearly be seen in Bell's journal article titled, 'We don't like to say "No"':

It was early in 1941 that the telephone companies first began to consider the possible effect upon business office service of having nothing to sell. It came up in connection with a program of conservation of telephone facilities and materials which the Bell System undertook voluntarily when the possibility of war focussed attention upon national defence. This program called for a change from the Bell System's traditional sales policy of promoting the use of the many items of telephone service through discussion with customers of their use and value. (Ord, 1944: 104)

Operators were, therefore, not only part of the communication channel; they had a very particular and calculated position within the communication channel—to increase Bell's sales. Telephone subscribers were meant to have a frictionless experience of reaching whomever they wanted in 'real-time', and getting the impression they would get whatever they wanted. This was the reason why the women who worked for Bell had to be attractive, young and unmarried, and why Bell had very strict policies regarding the way the women should look. Since telephone customers would not actually see the telephone operators, their appearance or marital state should not have mattered at all. However, Bell used the operators'

good looks as a promotional tool, bragging about operators who have found their husband by being their operator. This would increase the desirability of the telephone, which embodied these women.

Personalization of the telephone service had been a common practice since Bell's early years, intended to change the bad impression left by the boy operators. After a few decades, when the service became more popular, the personalized care that the operators provided could no longer hold due to the number of people. Nevertheless, it was portrayed as a positive evolution that made the service much better:

[T]he de-personalization of telephone service, from the standpoint of the individual operator's acquaintance with the individual subscriber, has led to a service that, in the overall sense, is more personal than ever before. For the very reason that the operator does not know subscribers personally, she treats them all as if she were at their personal service. Just because she cannot, in a vast majority of cases, know how important a particular call may be, she handles every call as if it were urgent—as courteously, as promptly and as accurately as she knows how. (Barrett, 1935: 288)

The re-introduction of this approach in the 1940s emphasized personal and friendly service. Operators were expected to behave 'naturally' and spontaneously, and give answers to situations that one might not foresee. The voice's tones had to sound authentic as if conducted in a face-to-face conversation with a friend. "Unnatural voice habits are avoided, such as mechanical voice tones, extreme rising inflection, exaggeratedly sweet tone, precise diction, and other voice mannerism which may be distracting or displeasing to the customer" (Prescott, 1940: 92). Although the operators were encouraged and trained to act like machines, they still had to emphasize their competitive edge by using their affective 'human-feminine' labor to make people feel like they are getting a pleasing personal service.

The 'tone of the voice' became a program for new operators to become friendlier, attentive and pleasing. "When a girl speaks too fast or too slowly, speaks either indistinctly or with unusual accent or inflection, or has a voice with extremes in pitch, efforts are made to assist her to conform more closely to tone-of-service objectives and yet retain as many of the individual pleasing qualities of her voice as possible" (Clark, 1950: 129). Here Bell wanted to shape both operators' mechanical skills along with their 'pleasing qualities' while erasing their individual malfunctions such as race, class or health. Overly polite speech that was highly emphasized before the Depression was no longer encouraged, and operators were

told that excess use of words such as *please* and *thank you* gave the impression of a formulaic routine, and must be avoided. Specifically:

Simply having the desire to render a pleasing and personal service is not enough. Activities directed specifically toward developing the right viewpoint include: Increased emphasis in training programs on the principles of pleasing tone, voice, and manner; Having groups of supervisory employees listen in simultaneously on operators' work, after which all members of the group discuss what has been heard, and reach a common understanding in regard to their individual appraisals of the service, tone, and manner; Encouraging all levels of management to use every opportunity to observe the service, tone and manner, followed by a discussion with the force of what was observed ... Employment of all contacts between supervisory force and employees in the day-to-day work for creating the proper viewpoint in regard to personalized service. (Prescott, 1940: 90)

Women's bodies, behaviors, and voices were under scrutinized control and inspection. They were constantly monitored and observed by their supervisors and peers to achieve what Bell considered the perfect pleasing service. Bell merged Foucault's discipline and biopower modes of governmentality by using elements of direct discipline as well as self-regulation and observation deployed on themselves and their fellow operators. An example of this hybrid bio-discipline was *Hear Yourself as Others Hear You*, a program designed for operators to listen to other operators while they were working, and evaluate their service skills from a subscriber's point of view (Prescott, 1940: 90). Here again, listening abilities were given to operators to **train their bodies** towards a more efficient service and discipline each other. Power was enacted by establishing the norm of operators' behavior, while punishing those who deviated from it.

The Human Information Processors

During the 1940s, Bell started to offer a service called the *Information Service*, which was designed to help subscribers find the telephone numbers of places or people they did not know. The information operator would help housewives to find the numbers of grocery stores, young men who were searching for a woman they had encountered at a party the night before, requests for ambulances and also "requests for telephone numbers from salesmen, professional men, and business executives who find the services of the information operator invaluable in their day to day telephone communications with their customers and associates" (Baurenfeind, 1941: 151). These women were expected to find answers in the

form of telephone numbers for various problems and questions people had, in less than half a minute, a precursor to web search engines. According to Baurenfeind (1941), the information operator managed to find the desired numbers nine times out of ten. The main objective was clear: “giving and obtaining complete and accurate information over the telephone and taking advantage of sales opportunities [to] increase the value of the service—which in turn results in its more extended use” (Hoy, 1947: 75). In this way, operators memory functioned as an archive which can be monetized for various purposes.

Another service was the *Intercepting Operator*, who was responsible for monitoring misdirected calls, or calls to telephone numbers that were no longer in service. This operator would interrupt the call and ask the caller ‘What number are you calling, please?’ Then she asked, ‘Will you make your call again, please?’, so that the customer could reach the destination.

She knows also the number of pieces of equipment in each channel which can be safely “busied out” for maintenance testing without affecting service, and when this number is reached, she takes action to have some of the normal “checking up” by the plant forces postponed so that the highways of speech may be kept clear for all to use. (Bauhan and Goudy, 1942: 130)

In other words, intercepting operators had to learn how the telephone apparatus and infrastructure worked, and act according to previous situations to reach equilibrium in the most efficient way, just as cybernetics viewed automatic machines. Bell’s treatment of women as informational processors, part of its media technologies, who facilitated the system *and* were assimilated into it, was a precursor to the key concept of cybernetics—feedback. According to Norbert Wiener, feedback is “the property of being able to adjust future conduct by past performance” (Wiener, 1950: 32). Operators embodied the feedback loop because of their function of maintaining the telephone system’s equilibrium by providing technical support, and a soothing emotional mechanism. They received limited and controlled listening abilities to gain knowledge about past apparatus malfunctions and subscribers’ complaints, which could improve future functions (with their function of their memory) and orderings of the service. When the operators did not have the correct or accurate knowledge, their feedback did not operate properly, which increased undesirable uncertainty (entropy) in the system; in other words, they became a noise source.

John Pierce argues that “cybernetics has laid claim to the whole field of automata or complex machines, including telephone switching systems, which have been in existence for many years, and electronic computers, which have been

with us only since World War II” (Pierce, 1980: 227). Operators’ functions, which were difficult to use efficiently and simultaneously by machines, were later delegated to automated silent systems. Operators conducted multiple actions simultaneously: determining the calling number; answering calls in the voice with the smile; soothing angry subscribers; distinguishing, deciding and **filtering** between noise on the line and a signal (decoding); determining the connection wanted by the subscriber (translation between human and machine languages); writing a ticket for billing; remembering what to do in various situations (storage and memory); detecting malfunctions by sliding between the system’s multiple layers, reporting and fixing the apparatus; and adjusting performance according to previous situations (by using their dynamic archive which is their memory). Therefore, operators embodied several key features of cybernetics that Pierce outlines: detection, s(m)oothing, **filtering**, prediction of future signals in the presence of noise, storage, and memory (Shannon, 1951).

Bell’s optimization of the human nervous system, in the shape of training programs for operators, then, served as an inspiration for cybernetics. Specifically, operators gave inspiration to the process of making media technologies more automated, multi-layered and yet with an interface that conceals the multiplicities of actors and channels involved to create a ‘real-time’ experience to ‘normal’ users. Operators’ work of tuning in an out of spaces gave inspiration to the design of media technologies that listen to people’s behaviors and produce a dynamic database that could make the service more efficient and economically successful.

A Design for Living

The Second World War brought various governmental restrictions over telephone usage, interfering with Bell’s economic aspirations. The War Production Board orders L–20 and its successor Utilities Order U–2 meant that there were disruptions in the regular telephone service. Subscribers were irritated and annoyed by these disruptions, and Bell felt it had to do everything in its power to maintain customers’ faith, loyalty, and trust. According to Green:

In the years immediately following World War II, the rush to fill backlogged orders, the end of over-time, the five-day work, large numbers of resignations, and continued growth contributed to the rapid increase in operators. Dial conversions, which had practically halted during the war, increased slowly in the years immediately afterwards. From 1948 to 1950, when conversions resumed a more rapid pace, the number of operators decreased. (Green, 2001: 162)

Since Bell's operators were considered a pleasing (selling) machine, they were also expected to satisfy the country. They were expected to work for free during war time. Framing it as 'volunteering', women who worked for Bell worked not only in Bell's positions, but also for other governmental agencies: "The telephone company was asked if one hundred girls would volunteer from the clerical forces to assist on their own time. They would indeed. Five hundred volunteers! ... and a pleased government official said 'Isn't that just typical of the telephone girls'" (Fawcett, 1943: 47). Operators were designed to increase Bell's sales and stabilize the brand's name and apparatus.

But to provide good service, their bodies needed to be in the best functioning condition. AT&T, the umbrella company of Bell, was extremely concerned with their workers' bodies, and was one of the first corporations to establish a medical department. This department was founded in 1913, and embodied "ambivalent if not conflicting goals, including a desire to mold a compliant and efficient labor force while simultaneously protecting workers' health and safety" (Cooper, 1997: 490). However, in biopolitics rationale—enacting power over a population by using techniques of intervening in, and managing bodies—these goals are complementary, not conflicting. According to Cooper, this department helped save AT&T money by providing preventive medical advices and showing the company cared for its female workers, and thus justifying its position as a telecommunications monopoly.

As mentioned above, due to their stressful work conditions, operators suffered from noise to their body such as anxiety, fainting, fatigue, nervous exhaustion, headaches, backaches, and strains in their arms, ears, and eyes. To correct some of these health defects, which Bell blamed on the operators, a training course called *The Health Talk* was developed during the 1920s and was standardized during the 1930s at all the company's training schools (Cooper, 1997: 492). As essential components of its communication apparatus, Bell could not afford to have damaged products.

The politics of life, or biopolitics, went a step further when it came to the intrusion into operators' bodies and leisure time. Bell women took part in health activities invented by the company in 1925, then called the *General Health Course for Women* and in 1943 transformed into *Health-Appearance-Personality*. This program provided instructions on how operators should take care of themselves and others through nutrition, exercise and hygiene. Operators' eating habits and diet were also a target for Bell to intrude and regulate. They had to go through another training course called *Food Makes a Difference*, which taught them good nutrition and fitness appropriate for war time (Fawcett,

1943: 40–1). In this way, Bell redrew the boundaries of the operators' bodies, listening to every movement, food consumed, and health condition so that it could gather as much data as possible. As Bell collected this data they were able to reconfigure the operators bodies with training of their body's health and nutrition to operate in the correct rhythms.

This increased intrusion into operators' ways of living can be illustrated in one of the flagship training programs developed by Dr. Theresa Boden, *A Design for Living*. According to Boden, 11,000 women had completed this program between 1939 and 1941, which then stopped during 1942 to 1945 so that “telephone women temporarily set aside their personal goals to give their free time and effort to the many war activities of those years” (Boden, 1948: 152). When the program restarted in 1945, the name *A Design for Living* was selected, and by 1948 more than 400,000 women were reported to have completed the program. The program was described as follows:

Health is not merely the absence of illness. Body, mind, and spirit form the whole being, and to be healthy, a person must be happy. To be happy, an individual needs some variety of interests, and it is toward discovering these that the Design for Living program is directed. Through Design for Living may be developed a more nearly self-sufficient person, free from the frustrations and emotional imbalances which, we recognize today, contribute seriously to many illnesses. We in the medical field believe that personnel activities such as Miss Boden describes are an integral and important part of a program of preventive medicine which should be our greatest contribution to the business. (Boden, 1948: 148)

As this description outlines, ‘health’ encompassed every aspect of a worker’s life—body, mind, and soul – to be happy. The program started in a meeting in 1939, where the Personal Relations Department of AT&T in New York wanted to provide an answer to what it described as requests from telephone women workers for a better use of their leisure time and their individual potential. The department felt that the best thing would be to enable these women to reach “means for discovering for themselves their real needs and interests—a continuing plan for individual self-development” (Boden, 1948: 151). The slogans that accompanied the program were hung in Bell’s offices, saying *What Do You Do with Your Time?* and *Do You Have A Design For Living?*

According to Bell, this program gave “proof of the variety of interests and needs of the women who ... have found through *A Design for Living* new meanings to life” (Boden, 1948: 153). None of these ‘meanings’ and ‘needs’ included higher

pay, stability at work, benefits or promotion, but rather what Bell needed from the operators. Thus, operators' bodies were not the final destination of intervention; their minds, habits and preferences inside *and* outside work were also a source of knowledge. This knowledge could then be harnessed for other interventions, and reconfiguring of their work, bodies, minds and apparatus. The more spaces Bell could listen to, the more it could know the operators and adjust their behaviors accordingly.

The program consisted of 10 weekly meetings of groups of 10 to 12 women, who would sit around a table and talk about their individual potential, while the discussion was led by a group leader. The program covered ten topics: conversation ('the art of making others feel "at home" with you'), speech ('how to say what you mean; the importance of choosing the right words'), reading, dress and grooming ('how to look your loveliest'), etiquette ('answers to your questions on the social rules'), entertaining ('how to be the perfect hostess; planning parties'), home decoration, managing the family's money ('managing your money—so you don't spend more than you earn'), travel and hobbies ('when to go and what to do with your holiday weeks and week-ends') (Boden, 1948: 151). As these topics illustrate, Bell wanted to know, control and manage its operators' bodies and minds inside *and* outside the work space, stretching its listening capacities to reach every aspect of their lives, to re-design it. This then enabled them to orchestrate the rhythms of their lives.

The topic of 'entertaining' meant organizing social events for soldiers, where the women were the main attraction. Operators had to function as hostesses and dance partners at parties Bell sponsored and the women organized. In addition, operators organized picnics for soldiers, prepared the food and provided services of companionship and romantic partners:

A park was selected for the picnic, the day and the time were named, and the young women were on hand to meet the boys, each with an attractively packed box lunch for two. Each man drew for a box and with it went, as partner for the day, the girl who had packed it. The telephone woman who acted as chaperone said that she had no difficulty getting the party started, but she certainly had a hard time getting the boys headed back to the post on time—they were having such a good time. (Fawcett, 1943: 49)

Bell saw this branded self of women with the company as the *Spirit of Service*, which it saw as traditional and contagious: "it doesn't take long as a rule for one of the operators, a 'First Lady of Communications,' to 'sell' the idea of working for 'her' company to others. Often these newcomers land at a switchboard,

sometimes at another kind of work” (Steelman, 1946: 139). ‘Spirit’ seemed to have had a wide meaning, which included control over operators’ bodies, minds and time, while selling all those components as part of the service. Importantly, the goal was to bring ‘happiness’ and ‘self-fulfilment’, which would prevent frustration that led to conflicts, especially those that were led by the operators’ unions.

Silencing Dissent

The attempts to penetrate into operators’ private lives were a way for Bell to circumvent protest and ‘militancy’ (Green, 1995: 943), unwanted forms of behavior that created disruption to its system; a noise source. Forms of organization and protest from Bell operators started as early as 1907 in San Francisco. In 1919, New England Bell operators organized a walkout, fighting for wage increases, which signalled to the company that it should address what they considered to be dangerous activities (Cooper, 1997: 502). As personnel expert Ordway Tead argued, “it was in management’s best interests to try to control informal organization among employees and to reorient their thinking along more ‘constructive’ lines” (Cooper, 1997: 502). It is precisely ‘reorientation’ that the *Design for Living* program was meant to do—rearrange operators’ rebellious actions into the correct order. Bell developed training programs for its operators as a noise reduction mechanism, a conversion to the correct behavior.

One of the solutions Bell found to be useful against the operators’ revolt was counselling. Popular workers were selected to be counsellors but the position itself did not require professional training, because the real purpose was not to solve mental or emotional problems. Rather, the counsellors were supposed to reduce distortions in their obedience and channel attitudes towards ‘productive’ directions. These counsellor-operators functioned as feedback loops to stabilize noisy disturbances. Over half a million counselling meetings occurred at Bell between 1936 and 1955 (Cooper, 1997: 503). Through both *Hear Yourself as Others Hear You* and counselling, Bell expanded the listening capacities of the operators to empower them to know their peers within and outside work, and also to train and educate them in cases when they deviated from the right way. Creating a database about what operators do and think was not only a site of interest and control for Bell but was also given in lesser capacities and in more controlled manners to the operators.

However, the shared experience made in *A Design for Life* also contributed to a group identity that could turn towards organization and unionization, leading to the nationwide telephone strike in 1947, led by the National Federation of Telephone Workers (NFTW):

Women telephone workers and the organizations they built were the backbone of the 1947 nationwide telephone strike ... With 350,000 employees on strike, 230,000 of them women, the 1947 telephone strike was the largest walkout of women in U.S history. Carrying signs that proclaimed 'The Voice with a Smile Will be Gone for A while,' around-the-clock pickets paraded throughout the South, the Midwest, and in rural towns across America. (Cobble, 2005: 21)

According to Dorothy Cobble, 12,000 women who worked as operators in New Jersey left their positions, which was against the law, and were jailed and given high fines as a result. These women demanded equal pay and other rights in the workplace that they had been deprived of during the Second World War, and they had expected these conditions to improve once the war ended. Cobble argues that the NFTW failed to reach a national contract and that regional settlements were made with regard to the economic demands of the telephone operators. Therefore, the development of *A Design for Living*, along with its attempt to shape, control, and manage the operators, also served as a surveillance mechanism to eavesdrop on their leisure time.

Trying to control what operators did outside their working hours was a way for Bell to prevent any kind of activities or gatherings that involved union organization or discussions around their rights and work conditions. As one Bell Labs medical specialist argued: "[p]eople with interests seldom have time to be frustrated" (Boden, 1948: 161). Thus, the development of *A Design for Living*, along with its counselling treatments, contributed to the surveillance and biopolitical management of unwanted—noisy—behavior. At the same time, it could counter Bell's goals by helping to establish communication and collective action among the women. As Lipartito argues when talking about the telephone strikes in 1917:

The sudden expression of independence among the operators unsettled Bell management. As one member of the corporation observed, unions instilled in operators a 'lack of respect for authority' and resulted in 'independence of action by the individual' ... Both recognized that the same order and purpose that made for efficient switching could be turned against the company. Because manual switching required machine-like discipline, independence of mind endangered the entire telephone network. (Lipartito, 1994: 1108)

Cybernetics' aim to achieve equilibrium was inspired by Bell's interpretation of the term; which meant efficient transmission of information in the minimum time, and at the minimum of expense and disturbance. Since this stabilization was interrupted by the operators' constant rebellious actions, Bell realized that their positions should be delegated to machines. Thus, control and power were

to be enacted on the population through more automatic technologies; the right way to behave with the apparatus was integrated, automated and delegated to the company's devices, while presented as the only way of usage. As Wiener, argues:

A recent innovation in the technique of telephonic switching provides an interesting mechanical analogy to man's adaptive faculty. Throughout the telephone industry, automatic switching is rapidly completing its victory over manual switching, and it may seem to us that the existing forms of automatic switching constitute a nearly perfect process. (Wiener, 1950: 59)

This victory of the male adaptation ability shows how it was achieved by disciplining and managing women and then driving them out of the workforce. Their noise became silenced by automatic machines, whereby the technique of governing (cybernetics) was in-built, not supplemented.

Conclusion: Noise Against the Machine

This chapter examined the way media practitioners (re)produced people and territories by using sonic epistemological practices in the two decades before Claude Shannon's information theory. In the first event, Bell was given a **license** by the NAC to scientifically measure NYC and processed listen to multiple spaces across the city to provide a numerical map of the noisy places. **Measurement** was carried out using two devices developed by Bell, and these could only be operated by its **experts**. Both devices required Bell experts to learn, operate and interpret the sounds they listened to.

As scientific **measurements** were perceived to be objective, the knowledge Bell produced with its devices and quantitative units could be used for various rhythmmedia strategies. This database could be monetized and traded for various other services. Moreover, promoting Bell's involvement with the NAC, including the decibel and telephone numbers across multiple media outlets established Bell as the main authority of sound and noise. Bell gained the **license** to be the exclusive knowledge producer, and its terminology and importantly world order was credentialized as the main way to think and understand ways of living. By measuring the city with Bell's tools and unit, people and territories were reproduced according to the company's classifications of sound (normal/healthy) and noise (abnormal/sick).

In order to be healthy, people needed to **train their bodies** in several ways to be quiet. First, people were educated on how to describe different behaviors

using decibels. In this way Bell promoted its rationale of how behaviors could be categorized, described and understood and make it the standard. Second, people were trained to behave in ways that would not create noise and consequently burden the city's infrastructure with their unlicensed commerce practices and uncivilised behavior. Specific groups of people were the target of the NAC and Bell, mainly street pushcart sellers who were usually foreigners from Europe and Black Americans in Harlem. Third, people would be encouraged to educate their peers into the correct way of behaving, thus helping the municipality's authorities in changing and monitoring the noisy actions of problematic people. In this way, the NAC and Bell's interpretations of what a healthy citizen's body should sound like, how it should behave, when and where, were (re)produced.

The healthy body was reproduced with Bell's measuring unit, its own language of describing spaces, humans and their relations. These orchestrations of people's bodies, how they interact with each other, how they move across the city, and when was a way to create a new order. These reproductions were not coincidental; they were calculated and correlated with other economic interests that fitted Bell and the other interest groups that collaborated with the NAC. Their main aim was to conduct *rhythmedia* that reconfigured the way people behaved and also how the city should be reordered towards specific economic endeavours. Any behavior, group of people or areas that would interfere with such aspirations because of their problematic commercial/advertising practices, political activities, racial difference or other disturbances would be categorized as noise.

In the second event, Bell's operators undertook **training** programs to optimize their bodies and minds to make the telephone service more efficient and economically profitable. The 1929 stock market crash that led to The Great Depression, along with the Second World War, made Bell realize the many uncertain conditions that could affect its business. This led the company to adjust its strategies to exert control and power over the things it owned, such as the telephone and the operators. Noise was any unwanted form of behavior in its systems that had to be controlled and managed in order to create a frictionless operation. The power the company held in the communications market of North America gave it the **license** and ability to make such far-reaching intrusions into its telephone operators' bodies, minds and leisure time.

Operators had to manually facilitate the switchboards, understand the infrastructure like engineers and fix problems in 'real-time' but at the same time sooth angry subscribers with their affect and therefore held multiple positions. These positions are: the communication channel, filters of human and non-human

noise and the feedback by adjusting future conduct according to past knowledge (with their memory/archive). Operators' work is repetitive and conducted continuously, to create the illusion of immediacy and real-time experience, while shaping what is sociality.

In the *Design for Living* program, operators were trained to exercise, take care of their body hygiene, and have special diets; they were given advice on what to read, what do in their spare time and how to manage their money. Every aspect/space of their lives was listened to, to know everything about them. This was then used to reorder their lives in a desired rhythm. However, Bell also gave the operators controlled and limited listening capacities to **de-politicize** their actions. First, the company gave operators the ability to listen to their peers in the *Hear Yourself as Others Hear you* programme. This was done in order to monitor and police their interactions with Bell's subscribers. Second, the *Design for Living* program was meant to provide group discussions in which the operators would talk about their leisure activities, and were given plans on how to conduct various aspects of their private lives. As these programs were conducted after work hours, this was also a way to monitor and spy on what they did outside work. Third, Bell delegated some listening capacities to selected 'likable' operators who functioned as counsellors to decrease the noise of the rebellious operators who were part of the unions that were forming across the country. In these ways, Bell provided controlled listening capacities to operators to deploy in certain spaces and then the 'uncrowded' their rhythms both inside and outside work.

All of these training programs and the development of the operators' work were an inspiration for cybernetics, which aimed to control the communication systems that constructed information's correct behavior, and, consequently, people. Bell enmeshed biopower with its disciplinary Taylorist approach and created a hybrid. This mixed mode of governmentality was enacted to control telephone operators' behavior and attitudes within *and* outside the workplace. It stretched the scope of discipline beyond specific architectures such as the work place and penetrated new territories of life.

Both the conceptualization of 'bad' human behavior as noise, and the recognition of humans and machines as components of a communication system in Bell's treatment of its operators, would provide the basis for the replacement of human operators by dial switching. Instead of employing and managing noisy operators, Bell could swap them with automatic machines that could achieve equilibrium through self-governing feedback loops. Thus, Bell enacted its power through an in-built, silent, controlled design, and by doing so decreased both people's ability to disrupt its inventions and the uncertainty of its systems.

This also sets the foundation for Shannon and Weaver's conceptualization of noise, which they developed at Bell Labs in the late 1940s. In information theory, they established and legitimized which forms of information should be categorized as statistical irregularities—noise—and which should be classified as a (normal) message. This, in turn, would lead to the development of cybernetics, as control over systems of communications (animal or machine) would be delegated to automatic multi-layered machines operating in a feedback loop. These technologies were designed in a specific way to efficiently govern through statistical measures that constructed the right behavior of information and, consequently, the people who used them. However, their interfaces and designs conceal the multi-layer channels at the back-end, and especially the decision-making processes that are involved in the process.

This means that technologies are never neutral or objective. Media companies' values which often discriminate along lines of gender (Hicks, 2017), race (also see Benjamin, 2019 and Noble, 2018), socio-economic situation (Eubanks, 2017), and ability (Hamraie, 2017), are shaping the way these technologies are developed and created. These, in turn, influence the way people engage and understand these media technologies, including how to behave and not behave, how and if people can protest and what values they should care about. In this way, the categorization practices of media companies around specific behaviors as deviant has further political, social, and cultural repercussions.

This introduced the next phase in the evolution of biopolitics as a new form of governance which was more automated and hid multiplicities of actors and communication channels. Therefore, this was also a development of the power relation scope and the way it was operated: controlling, governing and managing people through new extensions and techniques afforded by automated, media technologies.

Notes

1. The NAC produced two reports (Bijsterveld, 2008: 116): the first that is examined here was published in 1930, and the second was published in 1932 in a limited edition, but will not be examined in this thesis.
2. Johns-Manville Corporation was founded in 1858 in New York and manufactured insulation, acoustical and magnesia products. In 29 January 1930, the company's stock was included in the Dow Jones Industrial Average.
3. International Committee on Acoustics.
4. The sensory system used for smell.

5. 1924 saw the Immigration Act, which limited the numbers of immigrants that could enter America.
6. For convenience, they will be termed 'operators' from now on.
7. Walter A. Shewhart invented control charts, otherwise known as Shewhart charts.
8. John E. Karlin is considered to be the 'father of human-factors engineering' in American industry, and the inventor of the push-button telephone keypad.

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Fabricating the European Union Safety Net

This chapter jumps ahead several decades from the previous chapter and straight into the dot-com bubble crash around 2000. Like in the previous chapter, this time period was also important as the roles of different actors in new communication territories were (re)constructed and (re)defined, crafting new media categories along the way. It was a time that, just like the development of information theory, redefined what it meant to be human, the nature of communication, and introduced new measuring devices and units. This period in the internet's history is crucial as it redefined the way people and territories were mediated and introduced new power relations that needed training. Similar to the early days of the telephone it was not clear whether the internet would survive. This chapter explores the way media practitioners wanted to make sure the internet—specifically its iteration as the World Wide Web—succeeded in yielding profit and what strategies they deployed to find a way to fund it.

In the previous chapter we heard how Bell constructed noise to be everything that interfered their business model. Bell wanted an efficient and smoothly functioning communication channel, and ordered people in particular times and spaces to accommodate that. This chapter examines digital communications, specifically in the European Union (EU) internet. Just as noise was defined to cater to Bell and the NAC's needs, here too spam is defined (and undefined) to cater

to the needs of the digital advertising industry. This chapter shows what strategies were conducted to make spam a separate, *flexible*, media category to cater to perceived threats to the advertising industry's business model.

The chapter continues the same project of examining at how media practitioners use the seven sonic epistemological strategies to (re)produce territories and people (here they turn into data subjects). Whereas the previous chapter examined the reconstruction of New York City, the first section of this chapter focuses on a different territory—the internet in the EU. It shows how new architectures of knowing people were created. These architectures were the building blocks to many of today's emergent problems with big technology companies—trackers, fingerprinting, micro-targeting, profiling, data brokers, real-time-bidding—which are part of the out-of-control digital advertising ecosystem. The second part of this chapter will continue the project that Bell started in shaping, training, and managing people's bodies to become automated machines who function as communication channels, to the exclusion of (what they define as) noise. Similarly, this second part shows how media practitioners measure people's behavior and categorize their deviant behavior, now called spam.

In this chapter, there is a development from material and embodied epistemological tools of sound, noise, listening, and rhythm to more immaterial tools on the internet. However, as Lakoff and Johnson argue, concepts “structure what we perceive, how we get around in the world, and how we relate to other people. Our conceptual system thus plays a central role in defining our everyday realities” (Lakoff and Johnson, 2008: 4). In other words, concepts and metaphors *do* things.¹ Such metaphors are powerful in their ability to do things, as can be seen with the now commonly used metaphor in technology—‘the cloud’. More than that, these digital territories affect many aspect of people's everyday lives—from price discrimination, to micro-targeting citizens during elections and onto how they can organize and protest online—the consequences are very material. Ultimately, this chapter shows how the web's business model was standardized as the *only* way to experience it; a design for living that impacts our societies in ways which we are only starting to understand and act upon.

This chapter focuses on the struggle between EU legislators (mainly the European Commission), advertising associations, and internet standard organizations to define what is communication on the internet, who are the actors in this process, how they should operate, how their environments and possibilities of living should be designed and understood, and the (unwanted) categories of such events. These texts are usually considered to be the ‘boring’ bits, but underneath the many pages of legal documents and technical standards lies

the power to produce new media territories. As John Oliver once said when talking about Apple's iTunes user agreement: "If you want to do something evil, put it inside something boring". Susan Leigh Star recognized the powerful narratives hidden in boring things like information infrastructure back in 1999, as she says:

Study an information system and neglect its standards, wires and settings, and you miss equally essential aspects of aesthetics, justice, and change. Perhaps if we stopped thinking of computers as information highways and began thinking of them more modestly as symbolic sewers, this realm would open up a bit. (Star, 1999: 379)

This chapter will open up the sewer and surface the foul odors and show that behind these seemingly boring things there is a struggle to define how we experience the web. To do that, this chapter focuses on legal and technical discourses. Since law and computing need specific definitions to operate (and execute) these fields are extremely productive for examining digital phenomena. Both of these fields also present their definitions as objective truths, hiding the politics, struggles, and power structures engineered into their discourses.

Such discourses, then, should not be taken at face value, but rather should be carefully peeled back in layers like the examination of any other data, to get to the heart of things. This chapter then provides a critical analysis synthesising EU legislation, advertising associations' standards, and internet standards, and I shows how they construct power relation. This is done by naturalizing specific behaviors, mainly those of the advertising industry, over others. In doing so the digital advertising industry create standards that seem like the only way things can function. But as the history of the telephone shows—there are many ways technologies can develop, operate, used, and be managed.

As part of **restructuring territories**, this chapter introduces multi-layered communication channels that are concealed from people and at the same time rely on their behavior. This reorganization introduces new listening capacities, which enable people's behavior on the internet to be measured, categorized, recorded, and filtered. This is precisely why sound is more suitable when we examine these digitally mediated territories because it can move between multi-layered infrastructure boundaries like the internet. These channels communicate people's behaviors which become the message (turning into 'data') and are listened to through (first and third party) cookies allowing for further ways of knowing people through **measurement**. You can think of cookies as dozens and hundreds of tentacles sent from various sources and plugged to your body, and importantly—*without* your

knowledge or consent. Power is enacted here in two main ways: first, knowing about the existence of these channels, usually making cookies communication ‘silent’ for the average user; second, the scope of listening—the more people and spaces media practitioners can listen to, the more power they gain.

The second part of this chapter focuses on the way new data subjects are (re)produced on the EU internet in three ways. I use Evelyn Ruppert’s definition of data subjects as “the practices through which one *becomes* data through interactions with numerous other actors and actants” (2011: 255). In this context, people are always in the process of becoming data subjects. First, the **new experts** have been involved in developing new *processed listening* capacities using standardized units to **measure** people’s behavior on the internet, mostly through web-browsers. Such *processed listening* turns people’s behaviors into objects—data—which can be quantified, compared, transferred, and monetized in the accelerated rhythm channels. To have more accurate measures of behaviors on the internet, the advertising industry has developed filtration mechanisms. They **filter** non-human traffic that can jeopardize the consistent and accurate listening procedure. **Measuring** in a standardized manner and turning the internet into a monetizable medium was a problem. Rendering the population as audiences according to advertising companies measuring units, instruments and rationales enabled this medium to survive after the dot-com bubble crash and thrive in the aftermath.

Second, part of the standardization process was providing ‘control’ mechanisms for people. But while these were presented as protecting the bodies of people, what they were actually doing was protecting media companies. In this way, people were trained to behave and understand very limited ways of using the web while other actions were **filtered** out because they were noise to the sound of e-commerce. Third, producing data subjects was also conducted by **training of the digital bodies** through the Safer Internet Programmes that spanned from 1999 to 2013. This biopolitical training program educated EU citizens in reporting and stabilizing the EU online market by encouraging citizens to report illegal content and navigate between pre-decided **filtering** mechanisms that were provided to parents. People’s digital lives were a default setting.

Opening the ‘Back-End’

To understand how it was possible to create all these multi-layered communication channels and turn people into multiple data subjects we have to go back in time, to the end of the 1980s. One of the first steps to produce the European

online territory can be traced to 1987, when the European Commission introduced the *Green Paper on the Development of the Common Market for Telecommunications Services and Equipment*. The Green Paper² emphasized the need to break national barriers for the development of vital economic activity. The European Community argued at the time that the “single most important factor in modern ‘production’: knowledge” (Commission of the European Communities, 1987: 44). This knowledge economy involved data trade and exchange, which ultimately meant the commodification and trade of EU citizens’ behavior. The European Commission made clear that no barriers, and hence no regulation, should be applied:

For one sector of the emerging communications market, the exchange of data, i.e., the linking of computers, the impact will come earlier. Present narrow-band networks, upgraded through digitisation and the introduction of ISDN, allow considerable expansion of data exchanges, especially if regulatory obstacles to such expansion are removed. (Commission of the European Communities, 1987: 54, emphasis in original)

Such free movement of data within the EU helped to establish new communication channels that transferred and traded data, or in other words—people. It created a new online market where people’s behavior was (re)produced as the key product of trade. As the Green Paper indicates:

One important economic, political and cultural advantage for Europe of advanced Europe-wide telecommunications derives from the possibilities created for the enhanced exchange and free flow of information. This advantage can only be fully materialised with the development of a common market for information. (Commission of the European Communities, 1987: 139)

The Paper insisted that this online market should be managed by commercial actors, which meant there needed to be a separation between regulatory and operational functions. But to achieve that, commercial actors needed to obtain more power from EU states; they needed to be granted authority, a **license** to be the **new experts**.

The 1987 Green Paper was part of a larger European-wide governance transition to ‘soft law’.³ Just like it sounds, soft law has no teeth, and purposefully so. According to Linda Senden (2005), from the mid-1980s, the European Community started to change its approach to legislation towards co-regulation, and self-regulation as the main instruments of governance. Senden outlines two

complementary approaches that represent this European legislation policy; first, ‘do less [regulation] in order to be better’; and the second, use more non-binding recommendations, best practices, guidelines, and communications. Another tool Senden emphasises is flexibility, meaning there is no need for the agreement of all member states on issues. Ultimately, the soft law approach meant delegating power to commercial actors to decide and apply their own values and principles. From the European Commission standpoint, it was cheaper, more efficient, and made it much easier to avoid responsibility when things go wrong.

An important legal document laying the groundwork for the delegation of power to commercial actors in the EU telecommunications sector was the 1999 decision regarding safer internet and combating illegal and harmful content (276/1999/EC). This decision introduced the first phase in applying the soft law approach and aimed to highlight the importance of **licensing** commercial actors to regulate illegal and harmful behaviors on the internet. This rationale can be seen in Recital 5:

[P]romotion of industry self-regulation and content-monitoring schemes, development of filtering tools and rating systems provided by the industry and increased awareness of industry services as well as fostering international cooperation between all parties concerned will play a crucial role in consolidating that safer environment and contribute to removing obstacles to the development and competitiveness of the industry concerned.

What such statements were meant to do is cement the central role of commercial actors, in making important decisions in the then new online European market on how the internet should function as an economically viable and thriving medium. Importantly, Recital 12 states that, “cooperation from the industry in setting up voluntary systems of self-regulation can efficiently help to limit the flow of illegal content on the Internet” (276/1999/EC). This was a key moment in institutionalizing the position of commercial actors by granting them a **license** to be the new producers and regulators of the internet through ‘voluntary’, self-regulation mechanisms. This **license** enabled them to conduct processed listening and rhythmmedia, and, consequently, to produce data subjects. The EU tried to sell the idea that these steps were about safety, but these instruments introduced unaccountable procedures of monitoring, spying, and **measuring** citizens’ movements online, while commodifying and trading them. In this way, citizens’ behaviors were conceived as things, objects, and products to be traded in the new online market created under the soft law approach.

What emerges from the EU policy documents is a discourse that normalizes commercial actors' deep involvement in producing the internet territory as well as policy-making and enforcement. As Katharine Sarikakis argues about the naturalization of privatization in internet governance:

The ideological and normative constructions of policy-making for the Internet express a form of *neo-liberalist determinism* that can be categorized in three major narratives: technological determinism, economic and structural inevitability and the ideology of private-public partnership, asserting the involvement of the private sector in public policy. (Sarikakis, 2004)

Such narratives appear in all the EU legislation documents examined in this chapter which, as Sarikakis argues, are designed to regulate people's behaviors rather than the economy, as they argue. This new online market produces bodies, data subjects that can be listened to, **measured**, categorized, segmented, and traded. This is done by rendering people's behavior into data that is then fed to re-order people's personalized experiences through their web browsers. This approach will be shown below in the case of distinguishing between spam and cookies through non-legislative agreements and documents produced by the Interactive Advertising Bureau (IAB)⁴ using its standards and measuring metrics.

To provide **licenses** to themselves, advertising associations drafted various self-regulation standards, 'best practice', charters and models which authorized their positions as key players in the EU online market. In June 2004, the European Advertising Standards Alliance (EASA⁵) organized a self-regulation summit with over 130 participants from the advertising industry, including the European Commission, to sign the Self-Regulation Charter. This Charter relied on two earlier documents: the EASA Statement of Common Principles and Operating Standards of Best Practice (2002), and the EASA Best Practice Self-Regulatory Model (2004). According to the Charter, its main aim is to promote '*a high standard of consumer protection based on the premise that advertising should be legal, decent, honest and truthful*' (EASA, 2004b: 1, emphasis in original). This was a way for the digital advertising industry to show the EU that regulation would be a bad idea, and that their industry can control itself (an argument they keep on telling...).

Regulation, as the Charter says, cannot be achieved by legislation but with self-regulation, and legal measures should only be taken with 'rogue traders'. Here, the advertising industry **licenses** itself to act according to its own rules, but asks states' legal systems to make self-regulation 'effective'

by punishing problematic advertisers and traders who do not follow their standards. The digital advertising industry's 'self-regulation' is funded by the industry, adjudicated by the industry, to guidelines established by the industry, but enforced and punished by the state. In this way, digital advertisers position themselves as key players, whose rules are constructed without the state but are enforced by it.

The self-regulation sanctions appear limited to publishing decisions, though without any mention of the scale or to which audiences. These standards also encourage consultation and involvement without stating how binding such engagement might be, and advocate awareness of the self-regulation system without stipulating what mechanisms are to be deployed and how awareness is to be assessed or by whom. In addition, this Charter only applies to advertisers and not its accompanying industries such as data brokers and other companies who trade and exchange data on the silent communication channels, specifically Demand Side Platform (DSP) and Supply Side Platform (SSP) (which will be discussed below). In this way, the regulation on the digital advertising industry is soft, but the power they gain is not.

In these documents, moreover, when it comes to 'consumer awareness', the EASA discusses awareness of people's ability to complain about the industry's misconduct but not about the existence of the multiple actors involved in the online market. When the EU did decide that people should be educated about the internet, it was not about how digital advertising, and specifically first- and third-party cookies, ad networks, ad exchange, DSP and SSP and other ad-tech technologies work to fund their 'free' access. Rather, as the last section of this chapter shows, people were educated about the illegal and harmful behaviors they should avoid while reporting deviant citizens who conduct them. In this way, the digital advertising industry can produce data subjects that have limited understanding of the internet territory, and create a specially designed territory that will make sure they will also have limited options of behaving.

Therefore, standards documents such as the EASA Best Practice mentioned above, and others such as IAB UK's Good Practice Principles (2009), FEDMA's European Code of Practice for the Use of Personal Data in Direct Marketing Electronic Communications Annex (2010), the IAB Europe EU Framework for Online Behavioral Advertising (2011), the EASA Best Practice Recommendation on Online Behavioral Advertising (2011), are operating as **licenses** that are provided by these organizations *to themselves* in order to legitimize their practices. Importantly, these **licenses** provide the authority and credentials to create new power relations constructed by the new online market.

Governing Softly

The topic of internet governance and specifically the multiple actors involved in EU internet governance, or any internet governance for that matter, is complex. It comprises international bodies, governments, private companies and, NGOs that (try to) coordinate in a way that produces the operation of the internet (its structure and user experience). According to Marianne Franklin, internet governance “designates the technoeconomic and legal issues arising from any decisions, de facto or by law, that affect the design, access, and use of the Internet as a specific sort of communication network architecture” (2013: 138). This means that internet governance is conducted on a global, regional, and national level of territories, all at the same time.

With such complexity, it has been very difficult to agree on how the internet should function between countries and regions who think very differently about governing and media. Therefore, it was more convenient and desired by many western states to promote the soft law approach rather than specific laws. This saves governments and regional bodies the headache of having to handle with the operation, regulation, and enforcement of the internet. These companies can also help governments when they ask them to hand over sensitive information, as we were made aware in the Edward Snowden revelations in 2016. The self-regulation codes of conduct of advertising associations and contracts with commercial companies such as Internet Service Providers (ISPs), software, and protocol patent holders have become the new standard.

In the case of the EU, the power conflict between the multiple network actors becomes even more complicated as actors that are involved in establishing internet governance negotiate between member states, zooming out to the EC, and onto global actors such as the International Telecommunication Union (ITU⁶), the Internet Society (ISoc⁷), the Internet Corporation for Assigned Names and Numbers (ICANN⁸), the World Wide Web Consortium (W3C⁹), the Internet Engineering Task Force (IETF¹⁰), and the Electronic Frontier Foundation (EFF¹¹). Most of these organizations were founded and are based in the United States and receive criticism on the centrality of their values, language, and standards that are influencing internet governance.

Self-regulation of advertising associations and contracts with commercial companies such as ISPs, platforms and applications have become the new governing standard in the EU internet.¹² Such interest groups “have adapted to the multi-layer character of the European system by establishing organizations at all levels, building direct channels of contact to supranational as well as to national

political actors” (Kierkegaard, 2005: 312). These **new experts** have been influential players in designing the internet architecture in which people operate, as well as deciding, defining, managing and controlling their behaviors. In particular, these groups aimed to establish legitimate and illegitimate behaviors and architectures according to their business model. This is illustrated in their strategies to distinguish between spam and cookies and restructuring the spaces where these can be performed.

So how do spam and cookies relate to online behaviors? Are they behaviors at all? And how does that relate to how we experience and understand the web today? We can start by checking the definitions. While spam’s exact definition cannot be found in EU law, non-governmental organizations such as the IETF have described it as “mass unsolicited electronic mail” (Lindberg, 1999), or, similarly, as the anti-spam organization Spamhaus explains, “Unsolicited Bulk E-mail ... Spam is an issue about consent, not content” (Spamhaus, n.d.). Emphasizing these characteristics shows two important aspects when classifying forms of behavior on the internet: whether this behavior creates a burden on the system’s infrastructure (bandwidth), and whether this behavior was conducted without being requested. These two topics have different interpretations and meanings for different actors at different times.

When it comes to the second aspect—‘consent’ (more on the politics behind consent in the sections below) provides insight into the politics of categorizing spam, because a division has been created between spaces where people have the right to reject communication, and spaces where they do not.¹³ This division is about what constitutes public and private space on the internet. Just as people do not have a right to reject seeing advertisements when they walk down the streets—because these are communicated in public spaces—they also do not have a right to refuse advertisements in spaces on the internet that are conceived as public. To do that there was a need for a different kind of architecture online, to produce an economically friendly territory that will fund the web.

Baking Cookies into the Ecosystem

Designing an architecture that re-draws the boundaries between private and public spaces on the internet began with cookies. In the original HTTP protocol¹⁴ (Berners-Lee, Fielding, and Frystyk, 1996), which is the main protocol used for communicating through the web, each request made by a client (a user’s computer) from user agents (web browser) would be treated as ‘new’. This meant that origin servers (websites/publishers) would not ‘remember’ that the user had

requested an object(s) in the past, or any other activity the user did on this space. Cookies were meant to change this by creating what computer scientists call a 'stateful' session.

Originally designed to make shopping online easier, cookies were invented in 1994 by the programmer Lou Montulli and refined by John Giannandrea, both employees at Netscape Communications. "Montulli decided to store the information on the user's computer instead of within the URL. This solution was termed Persistent Client State HTTP Cookies" (Shah and Kesan, 2009: 321–2). Cookies revolutionized the web because instead of treating each time you use the web as a 'new' *anonymous*—session, it began to remember what you previously did in a particular time and space. Cookies gave the web a memory; it gave your actions on the web a 'past' which you have no idea about or access to.

With the introduction of cookies, two other important things happened to the web—cookies penetrated people's *private* bodies, enabling access to their personal computers, and importantly, they introduced additional layers of communication channels to people's internet. Cookies opened a new architecture with a separate economic ecosystem that was hidden, automated and accelerated. According to Schwartz (2001), in 1995, the IETF established a working group led by David Kristol, and later joined by Montulli, to propose standards for cookies and their purposes. The way that cookies work, as the IETF standard document outlines, is that (human) users request various software objects (images, texts) from an origin server via their browsers, but instead of sending back only a response to these specific requests, and thanks to browsers' standards, the origin server also "returns an extra response header to the client, Set-Cookie ... An origin server may include multiple Set-Cookie headers in a response" (Kristol and Montulli, 1997: 2–3). The Set-Cookie contains all the details of that cookie, for example, its name, expiration date, domain (the website/server you requested), 'value', which is a unique ID number, and 'Path', which means a URL in a domain that it is valid. In this way, the origin server sends the tentacles and attach them to the user's unique body. The ID number, assigned to people's individual computers as an identification marker (and therefore cookies are commonly called 'identifiers'), is one of the main arguments that advertising companies use to justify this surveillance ecosystem, as it is creating the notion that the communication is anonymous. This unique body may be identified with a numerical sequence, but, as I will show below, that does not mean that it is anonymous.

So how many cookies could be sent before people (browsers) got sick? Montulli and Kristol outline the minimum design requirements that browsers must apply to support cookies, mainly that "user agents' cookie support should

have no fixed limits. They should strive to store as many frequently-used cookies as possible” (Montulli and Kristol, 1997: 14). These browsers’ design capabilities should allow “at least 300 cookies ... at least 4096 bytes per cookie ... at least 20 cookies per unique host or domain name” (Ibid). In this way, cookies were authorized and legitimized by design. This standard enabled hundreds of cookies to be plugged into people’s bodies (through their browsers) and communicate the behaviors they conduct in multiple websites to various media companies that traded them.

With this special **restructuring of the online territory** people’s experience on the web was conducted in a specific space called the ‘front end’, while the advertising industry’s activities were conducted in the ‘back end’. This created a knowledge boundary between ‘average’ users and the online market which was operating in accelerated rhythm at the back-end. So, although cookies rely on people’s browsing behavior, they are not signalled through visual or audio cues about this activity. Instead of automatically adopting computer scientists’ definition of cookies as a form of memory (‘state’), cookies can be described differently. After all, what they do is listen to people’s behavior across multiple spaces and render them into data that is communicated between different advertising practitioners or publishers. Thinking of them this way, cookies are a *form of communication*.

Montulli pointed this out as well when he says, “We were designing the next-generation communications system” (cited in Schwartz, 2001). Cookies have introduced new layers of communication whereby websites send dozens or hundreds of cookies that conduct processed listening to people’s behaviors across the web. This new form of communication has turned people’s behavior into data—the message—that is communicated between non-human actors operated by multiple actors. Cookies opened an architecture of multiplicities of users, commercial actors, communication channels and messages all orchestrated in multiple rhythms at the back-end. Cookies are part of a new territory where they communicate people’s behavior and create a dynamic database with profiles that can be monetised.

Furthermore, cookies requests through the HTTP protocol are performed automatically by people’s browsers, not according their requests. The ‘topics’ (pre-defined behaviors of people on websites) communicated by cookies are unknown and silenced to people. As Joseph Turow argues, “by not requiring the computer user’s permission to accept the cookie, the two programmers were legitimating the trend toward lack of openness and inserting it into the center of the consumer’s digital transactions with marketers” (2012: 48). This makes cookies a form of

unsolicited bulk communication conducted without a human interface (because they are conducted by non-human actors), meant for direct marketing (personalized ads). Sounds familiar, right?

So what type of communication is operated by cookies while plugged into your body? The main difference between the type of cookies is who gets to listen to you. First-party cookies are sent and operated by the publishers/websites that people request when they type the URL that is displayed on their browser's address bar. These cookies communicate with people's browsers without their knowledge but they are sent from the website they requested. Third-party cookies are a different story. These cookies are sent by other companies, which are unrelated to the website you type. Third-party cookies were developed immediately after first-party cookies and are operated by internet advertising networks such as DoubleClick but also by data brokers such as Acxiom, Experian, Epsilon, CoreLogic, Datalogix, including insurance companies and many, many more.

Advertising networks are companies that work with multiple websites to have better insights of what and where people do things across many spaces. This enables them to have richer profiles, and then monetize them. They have become the main technology used as part of behavioral advertising, which is an:

[A]dvertising that is based on the observation of the behavior of individuals over time. Behavioral advertising seeks to study the characteristics of this behavior through their actions (repeated site visits, interactions, keywords, online content production, etc.) in order to develop a specific profile and thus provide data subjects with advertisements tailored to match their inferred interests. (A29WP, 2010: 4)

Both first- and third-party cookies listen to people's behavior continuously across multiple spaces to create profiles that then suit specific segments/audiences. But it is people's repetitive actions, the ones that they do the most, that are most valuable for advertisers because they indicate 'profile' characteristic that can be monetised. From people's behaviors, advertisers build a unique profile which consists of: political affiliation, religious belief, sexual identity and activity, race and ethnicity, education level, income, purchasing and search habits, your mobile-phone brand and operating system, physical and mental health, location, film and music preferences and much more.

Cookies, then, are (bulk) communications conducted by non-human actors (people's browsers and publishers or advertising networks) who 'talk' to each other about pre-defined 'topics' (specific behavior criteria of people) and create "a flow of communication back and forth between that hard drive and the website's

server” (Debusseré, 2005: 76). According to Matthew Goldberg, in the United States, computers can also be considered as users and therefore cookies can be defined as electronic communication (Goldberg, 2005: 262). These non-human actors, then, listen to people’s behavior in different spaces and turn this knowledge into data that becomes the message of that communication channel. This message is then (re)assembled in a specific rhythm; commodified, monetized and traded in the ‘back-end’ market.

Third-party cookies, and the data (people’s behavior) they communicate with actors other than the first-party server that users request, is a practice that Montulli and Kristol did *not* favour in the first IETF cookie standard they drafted in 1997. In cases of ‘unexpected cookie sharing’, as they call it:

A user agent should make every attempt to prevent the sharing of session information between hosts that are in different domains. Embedded or inlined objects may cause particularly severe privacy problems if they can be used to share cookies between disparate hosts. (Montulli and Kristol, 1997: 17)

Three years later, in the improved version of the IETF cookie standard, however, the tone was more relaxed regarding third-party cookies and ad networks. Montulli and Kristol addressed issues of ‘protocol design’ by arguing that “[t]he intent is to restrict cookies to one host, or a closely related set of hosts” (2000: 20). By phrasing it as ‘set of hosts’ Montulli and Kristol legitimized advertising networks practice. Behavioral advertising facilitated by third-party cookies helped to reduce the uncertainty that advertisers were looking for when trying to establish which ads fit to which audience and whether they listened to or clicked them. As Omer Tene and Jules Polonetsky argue:

An ad network typically places a cookie on a user’s computer, which the network can subsequently recognise as the user moves from site to site. Using this identifier, the network can create a user profile based on the range of sites the user visits. Increasingly, in a process known as “cookie synching,” many third party cookies that advertising networks and exchanges use are linked to enable the availability of data across multiple platforms. (2012: 291)

‘Cookie-synching’ enable advertising networks to identify people by merging people’s behaviors across multiple separate websites into one identity, and this is facilitated by real-time-bidding (more on this below). This new way of listening to people and producing profiles/segments (knowledge) not only helped to stabilize the advertising industry targeting practices but also, importantly, offered an

efficient and successful way to fund the internet. One of the main ways that the cookies standard managed to not be considered as a disturbance to the system (like spam) was by bypass the problem of burdening bandwidth. Cookies have avoided being 'bulk' (like spam) thanks to browser being designed in a way that automatically discards them. It does so according to certain **filtering** procedures—after a certain number of cookies are sent or after they have been on people's devices for a certain amount of time. In the first IETF cookie standard document that Montulli and Kristol drafted, they argue that:

Because user agents have finite space in which to store cookies, they may also discard older cookies to make space for newer ones, using, for example, a least-recently-used algorithm, along with constraints on the maximum number of cookies that each origin server may set. (1997: 7)

Default design settings of browsers enable the cookie communication not to be considered as bulk, producing it as necessary sound and not noise. Although the tech and advertising industries were trying to sell cookies as a necessary tool for the internet, others thought differently. Privacy-concerned people classify this unsolicited communication designed to track people's online behavior as spyware. It is all about categorization, and cookies are much easier to digest. The advertising industry wanted to legitimize and authorize cookies, and they did that in every way they could. While there were various claims supported with research about the way spam is a burden on the bandwidth, similar research on how cookies burden the system cannot be found to date. An example of how spyware is a more accurate description of what digital advertisers have been doing can be seen with the accompanying technology to cookies called web-bug/beacon/pixel tag.¹⁵ This technology was developed at the end of the 1990s. A web-bug is an invisible graphic that is automatically downloaded to people's computers (without their knowledge) and enables an advertising company to produce more accurate user profiles. The process starts by sending the cookie and then the web-bug provides more accurate information on the kind of behavior the user performs on the pages they visit. This means that further wires are plugged into people's bodies to listen even deeper to their every rhythm and produce richer profiles.

According to Richard Smith from the digital rights NGO Electronic Frontier Foundation (EFF), the reason web-bugs are invisible to people is “[t]o hide the fact that monitoring is taking place” and that “[t]he Internet advertising community prefers the more sanitized term ‘clear GIF’” (1999). They were not the only organization concerned about this, the Article 29 Working Party (A29WP),

which was (until May 2018) the European advisory board on topics related to the protection of privacy and personal, was also worried about this kind of invisible and automatic data processing. As they argue at the end of the 1990s, “[b]rowsers often send more information to the Web server than strictly necessary for establishing the communication” (1999: 4). This means that the production of data subjects is conducted in a rhythmmedia that is silenced for the people, leaving them unaware of these procedures. This creates power asymmetries between people and the companies that listen to them, that are enabled by asymmetrical architectures.

Although these listening technologies are spying on people by measuring, recording, archiving, and monetizing people’s behavior for various purposes without their knowledge, the companies that operate such silent communication channels do not consider them to be spyware. As Danny Meadows-Klue, chairman of the IAB United Kingdom, said in 2001, “Cookies have been branded as spyware tools, or some kind of subversive software ... But it’s what we use everyday” (Reuters, 2001). Presenting them as everyday work that advertisers do was yet another way to normalize these spying activities and frame them in a harmless way.

The definition of spyware, as Laura DeNardis (2007) argues, is disputed among software developers and marketing companies who do not think their technologies should be categorized as such. So, although cookies and their accompanying technology web-bugs can be considered as spyware, malware and spam, they are not categorized as such. The main reason for this is that their utility has been portrayed as legitimate and vital for the web’s business model. This legitimization occurred with the transition from more traditional media revenue models, such as subscription, to the provision of free content funded by advertising. As DeNardis argues:

A segment of Internet marketing firms and advertising distributors adopted spyware approaches for financial gain, earning commissions when consumers viewed advertisements or for transactions resulting from advertisements. (DeNardis, 2007: 700)

Because they were the main funding source of the web, this revenue model meant that the advertising industry had more power in shaping how online communication would be defined, performed and managed. Such power is illustrated in the industry’s ability to influence the IETF cookie standard. According to Schwartz (2001), in 1997, the IETF working group recommended that people should have control and decide for themselves what kind of communication they wanted to be a part of. They recommended that web browsers should have a visual display

of such forms of communication (cookies), while providing information about their contents and purposes. This would give people a tool to listen to their own bodies and understand its hidden parts. This design option would enable people to know about various forms of communication conducted in the 'back end' and provide them with more tools to control and manage them (Kristol and Montulli, 1997: 15). Such a design would destabilize the power asymmetric, giving people more power to understand and engage differently on the web. However, for these suggestions, the IETF and David Kristol were bullied by the advertising and tech industry, which thought differently:

Each argument caused further delay—time in which the advertising companies became more powerful and the market crystallized around the two leading browsers. Mr. Kristol was not surprised, then, that neither Netscape nor Microsoft took to heart the recommendation that browsers block cookies unless instructed not to. He acknowledged that there was little he could do to persuade companies to adopt the voluntary standards. 'There's no Internet police going around knocking on doors and saying, "Excuse me—the software you're using doesn't follow I.E.T.F. standards"'. (Schwartz, 2001)

There is no 'internet police' because the soft-law approach was presented as a better solution. As tech companies (especially those who designed web-browsers) and the advertising industry became more powerful their arguments about not needing to be policed became the standard, and all this received the seal of approval and **license** of the EU. This approach worked so 'well' that technology and advertising companies were able to ignore voluntary standards as the standards had no teeth. And the advertising industry knew this, after all, their whole profession is about selling ideas. Regulators liked these ideas because they presented economically rich futures in shiny new technologies; For them, (ad)tech will fix it. Not to mention that most regulators did not understand how all of this worked, some, to this day, still do not.

While Montulli said the new Netscape browser—Navigator 4.0—would enable users to reject third-party cookies, he also reassured the digital advertising industry that "because the vast majority of Web users never bother to change their cookie preferences, the effect on companies that use cookies as targeting tools will be minimal" (Turow, 2012: 58). Montulli commented that:

If we were to unilaterally disable this feature, existing content on the Web would no longer work ... [Also,] sites that use [cookies] tend to use them in a way that generates revenue. If you take away revenue from the sites, then the users may lose their ability to go to these sites. (Bruner, 1997)

Montulli's remarks illustrate how important it is to naturalize this business model in the discourse about the web—that people's behavior should be traded if they want to 'go to these sites'. People's online behavior is governed in a biopolitical way, by shaping the options of living appear to them (in a particular rhythmmedia) through browsers' standard settings, where they can 'freely' act according to advertisers' rationales.

Similar to Bell, commercial companies are creating the standards of communication. Big companies use their powerful positions in the market to develop tools and **restructure territories** that benefit their businesses. With the EU's soft law approach, governments gave their power to commercial companies to develop, define, and enforce their own standards, under the **license** of self-regulation. It enabled a translation of EU laws according to the rationales of commercial actors. The delegation of regulation to commercial actors enables them to deploy sonic epistemological practices that order the options of living. These orderings in turn produce data subjects through mediated territories and the architecture in which they operate. This rhythmmedia was made legally possible due to the artificial boundary between private and public spaces on the web; The production of the web territory.

Inventing Private and Public Spaces

Due to the fact that private or public spaces on the web have not been clearly defined in EU legislation, law makers and the private sector wanted to produce these spaces while relying on characteristics of previous media technologies that people already know, such as postal mail or the cinema. In this way, it would be easier to educate people as to what is private and public as they transfer their systems of perceptions and behaviors to the newly produced online territory. Both Article 13, which is about spam, and Article 5, which is about cookies, appeared on the Electronic Privacy (e-Privacy) Directive because they mainly deal with the privacy of specific spaces on the web.

As we learned in the previous chapter, in the early 20th century it was crucial for Bell and others at the NAC to demarcate public spaces, such as the street, as illegitimate commerce spaces by zoning. Here, too, constructing specific spaces as public (and thus commercial) or private on the web was paramount to enabling it to function as a commercial medium. The purpose behind such zoning strategies is, as Lessig suggests, for commerce, "and the how is through architectures that enable identification to enable commerce" (1999: 30). The production of the EU online territory was conducted by

regulating illegitimate rhythms, such as spam, and legitimizing others, such as cookies. As part of their opinion on web anonymity the A29WP compared browsing to:

[B]rowsing in a public library or a bookshop, or wandering through the high street window-shopping ... A key difference though is that while browsing in a library or wandering the high street can be done in almost complete anonymity, browsing on the Web invariably leaves a permanent and identifiable digital record behind. There is no public policy or general interest justification for such traces to be identifiable, unless the user wishes them to be so ... Individuals wishing to browse the World Wide Web anonymously must be entirely free and able to do so. (1997: 9)

Despite these early acknowledgements from the European Commission that browsing is not anonymous, browsing was still constructed as moving in a public space, which was contrasted with email, which was framed as a private space. Constructing email as a private space also correlates with fundamental rights such as Article 8 of the European Convention on Human Rights and Fundamental Freedoms, which protects the right to respect for private and family life: "Everyone has the right to respect for his private and family life, his home and his correspondence" (Council of Europe, 1950). This can also be seen in the Charter of Fundamental Rights of the European Union's Article 7 'Respect for private and family life' (2000/C 364/01). Email, like the private home, can be accessed through a password that is synonymous with a key; only you, or people you trust (and the company providing the space), hold this key and can access and use this place.

In this way, email was conceived as analogous to a physical home, a space with clear boundaries that provides privacy to people's lives. It also provides privacy to the communication that connects them from that place. As the A29WP argue in relation to privacy of email screening (here again visual concepts are used for explaining listening procedures) services: "From the case law of Commission and the Court of Human Rights, it may be concluded that email communications almost certainly will be covered by Article 8 of ECHR, by combining both the notions of 'private life' and 'correspondence'" (2006: 3). Here, the A29WP argue that email is not only a private space; it is where *private life* is performed on the web (while still being ambiguous with 'almost certainly' leaving flexibility for other interpretations).

However, Internet Protocol (IP) address, for example, which is a number assigned to the computer that accesses the internet (Postel, 1980), a body

identification, is not considered to be a private space in this Directive. This is contrary to the definition of personal data according to the Data Protection Directive, mentioned above, which indicates that a natural person can be identified *indirectly* “in particular by reference to an identification number” (95/46/EC, Article 2[a]). It also contradicts the A29WP acknowledgement of “IP addresses as data relating to an identifiable person” (2007: 14), and even earlier opinions where they argue that “IP addresses attributed to Internet users are personal data¹⁶ and are protected by EU Directives 95/46 and 97/66” (2002a: 3), and that “this address has to be considered as personal data” (2000a: 11). In addition, the A29WP also acknowledge that browsing on the web, which is conducted in a ‘public’ space, should be treated as a private activity. They expressed this with regard to the ‘cookies Article’, termed ‘confidentiality of the communications’, in the Directive that preceded the e-Privacy Directive, the 1997 Directive for Telecommunications Privacy (97/66/EC):

[T]he Working Party thinks that surfing through different sites should be seen as a form of communication and as such should be covered by the scope of application of Article 5 ... This form of communication should therefore remain confidential. (A29WP, 2000b: 50)

Bypassing such opinions¹⁷ enabled portraying people as anonymous when browsing. In this way, it was possible to construct IP address and activity outside of email as conducted in a public space on the web. Consequently, this is a space where people do not have a right to reject communication, such as cookies. These opinions about the need for confidentiality when browsing were not implemented because of the new business model for the web (free access to content and services). This model required that only specific spaces and activities that would be dedicated for direct financial transactions will be private, such as email and paying for online shopping. The rest of the spaces that will yield indirect revenue for funding the web through advertising will be public and, therefore, not private. Creating the notion that email is private was meant to raise people’s confidence in the new EU online territory, and online commerce more broadly.

Put into context: the e-Privacy Directive was drafted during the dot-com crash, when at its peak, “all attention became focused on e-commerce, touting it as the New Economy. Users were first and foremost potential customers, and they needed convincing to buy online good and services” (Lovink, 2011: 4). After the crash, many people lost their trust in e-commerce and the web altogether. Creating a distinction between private (email) and public (web) spaces on the web was essential for the survival of EU e-commerce. Email was one of the main tools

for making purchases online making it a market-orientated medium. Therefore, it was important to keep it safe and reliable. This is highlighted in the EC's document:

One of the most worrying consequences of spam is that it undermines user confidence, which is a prerequisite for successful e-commerce and the information society as a whole. The perception that a retail medium is affected by rogue traders can have a profound effect on the reputation of legitimate traders in the same sector. (2004: 8)

This was an attempt to persuade people to believe in this medium as a safe and private space that can be used for buying online. This comment also shows how states' regulation is directed towards 'rogue traders', whereas the rest of the advertising industry is not under such scrutiny. Reviving e-commerce was a joint interest of the European Commission and commercial actors such as browser companies, publishers and advertisers; therefore, it was important to make spam a fluid category that represented anything that could harm the efficient functioning of EU e-commerce. As Wendy Chun argues, "[t]he commercialization of the Internet, its transformation into a 'secure' marketplace, facilitates control and thus regulation: the interests of commerce and governmental regulation coincide perfectly" (2006: 67). This could not be done with precise hard-law legislation, but rather with tech and advertising industries' self-regulation.

These media practitioners were promoting notions of privacy to ensure people would trust the web as a medium where they could buy things, a new commerce territory. They created architecture designs through the default settings of browsers to ensure that when people wanted to purchase things, then their behavior was kept private, as if it was in a private space. Forms of communications that processed personal data and were meant for commercial purchases were encrypted and credentialized by a technology that Netscape developed for its web browser, Navigator, called the Secure Sockets Layer (SSL¹⁸). According to Thomas Haigh, in 1995 a year after cookies had been developed by Netscape, and in order for the web to be a safe commercial territory, the browser company:

[A]dded a then-unique feature to its first browser and server systems: the optional encryption of data entered into Web pages as they were transmitted back to the server. (Netscape displayed a lock icon on the screen to let users know that the page was secured.) This advance, known as a Secure Sockets Layer (SSL), made the Web a practical platform for financial transactions and other sensitive data. (Haigh, 2008: 132)

In this way, specific behaviors on the web, those meant for economic purposes, were architecturally ordered to signal importance, because they were standardized as a default private mode. Such a mechanism was introduced to reassure people that buying things online would be kept private. By developing these two technologies in the 1990s, Netscape created a distinction between spaces where people buy online, which are private, and spaces where people live online, which are in a public space.

Through such territory design, people were biopolitically **trained** to understand their options of living online. Behaviors that were performed in public space yielded profit in an indirect way. Media practitioners listened to people's behavior in multiple spaces, turned it into data that could then be monetized, traded and exchanged. The types of data that were inferred from people's browsing repetitive behaviors were: age, location, sexual preferences, health condition, education, political views, content preferences and much more. These data could produce different types of profiles which suit different audiences that were traded between advertisers, publishers and other third-party companies. People's behavior, then, could be reordered into multiple segments of audiences, according to the online market and the bidding that traded them.

To do this efficiently, advertising and tech companies developed guidelines and technical features, which were more flexible, operated faster and were easier to enforce (by them). Keeping spam as a flexible category was important to tackle current and new emerging threats in the dynamically evolving EU web territory, while catering for online advertising, media and publishing needs. This flexibility can be illustrated in the many definitions of spam that are found *outside* legislation, showing that spam is much more than unsolicited bulk email; it just depends who and when you ask. Spam is also: illegal content, harmful content, pornography, spyware, malware, computer viruses, hacking, identity theft, illegitimate use of personal data, disruption of the network, fraud, and misinterpretation of contracts (European Commission, 2004), as well as: online gambling services, misleading and deceptive business practices, pyramid selling, and unlawful trade practices (OECD, 2005). The whole spectrum of evil things on the internet were embodied by spam and spammers.

What these multiple definitions of spam show is all the products and practices that might pose a threat to legitimate companies. Such classification has institutionalized and legitimized organizations' authority to define, enforce, and manage the online market territory. For example, pharmaceuticals, lottery and dating sites have a legitimate version and an illegitimate version. To regulate the online market, it was necessary to draw a line of legitimacy and legality by authorizing

specific products, companies and practices over others. Importantly, including spam not only with 'ordinary' direct marketing but also with porn, gambling, and other activities and products that are categorized as deviant made spam seem wholly evil. Cookies, by contrast, as the name indicates are very much wanted, as the Cookie Monster says—"C is for cookie, that's good enough for me". They are a form of communication necessary for the value-added experience of the web territory.

Making spam a resident evil was not implemented by governments, but rather by commercial companies under the European Commission's soft law approach. They did this by authorizing specific companies/websites while framing others as rogue. They also classified products, the way to circulate them (bulk) and the way to advertise them as illegitimate and, consequently, illegal. This helps to legitimize and institutionalize the online territory. But importantly, these strategies **train people's bodies** in what types of behavior are illegitimate and illegal.

Lobbying to Spam

As a global medium and a new market, states, and especially the private sector, wanted the web to be regulated, distinguishing between the legitimate companies and practices and the illegitimate ones. As Lessig argues, governments do this by indirect regulation: "it is not hard for the government to take steps to alter, or supplement, the architecture of the Net. And it is those steps in turn that could make behavior on the Net more regulable" (1999: 43–4). Since western governments try to appear as if they do not govern people's online behavior in disciplinary modes (that is the kind of things that only 'totalitarian' regimes do like Russia or China), they do so by delegating the regulation of digital territories to commercial actors. These media companies can then influence, modify and manage people's behaviors in a biopolitical way; ordering options of living whereby they can 'choose freely' within a digital space. As Lessig argues, governments are influenced by market forces, or, in this case, lobbyists from the advertising industry.

The advertising industry not only lobbied internet standards organizations such as the IETF (as shown above), it also targeted regulators to influence how the web should function. This is illustrated in Sylvia Kierkegaard's examination of the advertising industry lobbying campaign, led by IAB Europe, which pressured EU legislators to change the 'Cookie Article' (Article 5), while the final drafts of the e-Privacy Directive were being finalized. She argues that initially EU legislators proposed the opt-in mechanism, which made the digital advertising industry push for the opt-out mechanism. The advertising industry argued that this:

[I]s a compromise between privacy protection and free enterprise. Cookies are essential to users and website owners. If prior users' consent was required, this would put them off from using the Web to search for information, products and services. This, in turn, would undermine the EU's overall strategy of building a competitive European e-commerce. (Kierkegaard, 2005: 316)

The same industry that emphasized the need for consent when it comes to receiving unsolicited communication (spam) argues that the demand for (prior) consent to cookies might damage and harm the whole EU web territory. Naturalizing cookies as the only way to make the web work was paramount. On 13 July 2001, the European Parliament's first amendments to the e-Privacy Directive proposal were to prohibit cookies altogether,¹⁹ which was also the A29WP's suggestion in 1999:

Cookies should, by default, not be sent or stored ... This means for cookies that the user should always be given the option to accept or reject the sending or storage of a cookie as a whole. Also the user should be given options to determine which pieces of information should be kept or removed from a cookie, depending on e.g. the period of validity of the cookie or the sending and receiving Web sites. (1999: 3)

As Kierkegaard argues, "[t]he amendment caught the Commission, Interactive Advertisers and website owners by surprise because the cookie restriction would 'hinder' the growth of e-commerce and the industry's interest" (2005: 319). Consequently, the IAB, which was the most prominent lobbyist of the advertising industry in the EU, launched the 'Save our Cookie' campaign together with FEDMA and the Union des Industries de la Communauté Européenne (UNICE), which received the support of the online commerce industry. The strategy was mainly targeted towards MEPs, selling them the story that if website owners and publishers had to ask for people's consent before sending cookies, then they would lose millions of euros. The reason for the loss is the need to redesign their web pages to comply with this requirement. As they claimed, it would also harm their competitiveness compared to their non-EU counterparts, mainly the United States. Hitting the right buttons of the European Commission, they argued that this approach would harm the attempts of the EU to create a competitive EU e-commerce territory.

The final Directive was accepted by all sides on 30 May 2002, after a compromise was reached by banning spam in exchange for removing the wording accepting 'in advance' in the cookie Article and Recitals. This campaign was

successful, Kierkgaard argues, because there was no opposition from privacy interest groups since they were busy with their campaign to ban spam. Such privacy advocate groups, for example, the Coalition Against Unsolicited E-Mail (CAUCE), believed that spam is more dangerous as it can send viruses, while cookies can be deleted by browser preferences. The lobbying on people's understanding of the web worked.

The lobbying effects can be illustrated in the two most controversial sections, which are Article 5(3) and Recital 25. In Article 5(3), people are given the option to refuse cookies communication only *after* they have been sent, according to the opt-out approach. Recital 25 within this Directive takes specific note of cookies:

However, such devices, for instance so-called 'cookies', can be a *legitimate* and *useful* tool, for example, in analysing the effectiveness of website design and advertising, and in verifying the identity of users engaged in on-line transactions. Where such devices, for instance cookies, are intended for a *legitimate* purpose, such as to facilitate the provision of information society services, their use should be allowed on condition that users are provided with clear and precise information in accordance with Directive 95/46/EC about the purposes of cookies or similar devices so as to ensure that users are made aware of information being placed on the terminal equipment they are using. Users should have the opportunity to refuse to have a cookie or similar device stored on their terminal equipment. (Directive 2002/58/EC, my emphases)

As Kierkgaard (2005: 321) shows, the previous versions of this Recital evolved from mandatory prior consent (Parliament amendment), to receiving information 'in advance' (Council position), to this version, whereby people get information about the purpose of cookies. As the European readers of this book probably noticed, this has not happened. This is precisely where EU legislation draws the line of legitimacy, where it authorizes cookies as a legitimate purpose because they are 'useful tools' for web design and advertising. It is also where EU legislators acknowledge that access to websites' content can be conditional on accepting cookies and identifying people. Additional lobbying effects can be found in the legitimization of the use of web-bugs in Recital 24 of the e-Privacy Directive:

Terminal equipment of users of electronic communications networks and any information stored on such equipment are part of the *private sphere* of the users requiring protection under the European Convention for the Protection of Human Rights and Fundamental Freedoms. So-called spyware, web bugs, hidden identifiers and other similar devices can enter the user's terminal without

their knowledge in order to gain access to information, to store hidden information or to trace the activities of the user and may seriously intrude upon the privacy of these users. The use of such devices should be allowed only for *legitimate purposes*, with the knowledge of the users concerned. (my emphasis)

The Recital admits that people's terminal equipment, that is, people's computers (and bodies) where web-bugs and cookies' tentacles are plugged into, are considered to be their private sphere without properly defining what it means. Such forms of communications are allowed because they operate according to 'legitimate' purposes, in other words—for economic purposes. All this means that the EU institutionalizes e-commerce, whereby the advertising industry finances users' free access to content by trading them. This solution was promoted after the dot-com crash as the new online market. However, this business model, and specifically the cost that people have to pay, was not made clear, heard, or even known to them.

Furthermore, publishers avoided their obligation to provide the reasons why they collected and processed individuals' data through obfuscation: they list the purposes in the contract sections of their terms of service. This section, called 'terms of use' or 'terms and conditions', relies on the fact that most people do not read these long, laborious, and jargon-laden texts. The texts are designed to be impenetrable, meaning if you have a job, dog, families and basically a life, you are not able to have enough time to read all of them. Additionally, even if you did understand, it would take months to go over all the included clauses, which are changed frequently on top of being hard to read. Importantly, these contracts do not include how collected data are used, when, and the other actors involved. In addition, according to Article 5(3), member states are supposed to police and enforce breaches of confidentiality in commercial spaces, which many times are located on servers that are not residing in Europe. In some cases, when people removed browser cookies, their access to the publishers' website was blocked.

This is all a matter of how legitimacy is understood on the web. Up until the 2000s, big companies' communications were classified as spam by European Union citizens. It was "reported by ISPs in most Member States that 80% of spam cases in Europe originate with the big American sites such as Amazon, Travelocity and Barnes & Noble, with whom the recipients have previously had direct contact" (European Commission, 2001: 89). To legally bypass what people perceive and define as spam, the second paragraph of Article 13 legitimizes and prioritizes big companies, and their marketing practices. Article 13(2) says that, if a person has bought something from a company on the web, the company can send

her advertisements regarding the same kind of product or service, and it will not be categorized as spam. This falls under ‘inferred consent’: “consent which generally can be inferred from the conduct and/or other business relationships of the recipient” (OECD, 2005: 18). A single purchase may, therefore, be taken legally as the basis for a long-term relationship.

Framing spam as dangerous was a good diversion that allowed the cookie campaign to pass without objection. This was achieved by portraying spam as a form of communication that was not requested, sent for economic purposes in covert ways, which had the ability to track people and invade their private space while exploiting their data. The exact same definition, however, can also be applied to cookies. It is just a matter of which economic purpose is considered to be the legitimate one. In other words, spam and cookies are the same communication practice. Spam is categorized by commercial companies (advertising and media industries, ISPs, and publishers) as an unwanted form of communication and automatically removed outside of people’s digital experience. Cookies, on the other hand, are usually categorized as wanted forms of communication (by online publishers, website owners, and the advertising industry) and sent into people’s computers. In both forms of communication, people are not aware of such actions and they are conducted without their consent.

It is important to note that EU legislation and enforcement are not always effective. This makes sense because the soft-law approach creates an environment where enforcement instruments will be useless. As Mayer and Mitchell argue about the 2002 e-Privacy Directive—“In practice the directive has had little effect; member states have not taken any measures to enforce compliance, and in many cases they have treated browser cookie settings as adequate implementation” (2012: 418). Therefore, rather than regulating, these pieces of legislation create a discourse that naturalizes and institutionalizes the roles of each participant in the online automated market. It cements the central role of commercial actors in creating, defining, managing, and enforcing the online market. Nevertheless, the role of people in this online market had to be learned; new data subjects had to be produced, and the ways in which was done is elaborated below.

Composing the Data Subject

In the first half of this chapter I outlined how the EU web was reordered to produce a new territory. By redrawing boundaries of private and public spaces, the

digital advertising industry gained legitimacy and authority to enact power. Their power was to shape the web's architecture in a way that would enable them to conduct listening and create dynamic archives from the knowledge they produced. This knowledge then produced specific subjects who would behave in desirable ways. Several procedures were made to (re)produce EU citizens into data subjects, objects (their behaviors), communication channels, and **filters**. These procedures were mainly conducted by the advertising and tech industries and the European Commission to **train people's bodies** in using and understanding the web in a particular way: to shape them according to their data subjects role(s). This was achieved in three main ways: one, standardizing web metrics; two, providing 'control' mechanisms to control people; and three, educating for safety.

During the production of the EU digital territory, the advertising and tech industries wanted to produce people as data subjects that navigate within default setting architectures that structure their possible ways of living. They mainly wanted to be able to listen to their behaviors across the web, while **measuring** them using standardized tools and units. This enabled these media practitioners to train and institutionalize *themselves* in their profession's practice of commodifying people and their behavior. It also enabled them to statistically map human behavior online and establish categories for deviant and non-human behaviors. In addition, people were given 'control' mechanisms when they used the web, but here control was enacted *on* people rather than *by* people.

The concept of control was used against people as these options were predetermined, limited, and designed in a way that narrowed and managed the way they used and understood the web. Control also meant that, once people consented to cookies or expressed consent by using default settings, they were also made responsible for their actions. People were responsible even if they did not know the meanings or repercussions of such 'actions'. Finally, people went through an educational program designed by the EU called *The Safer Internet Action Plan*, that spanned between 1999 and 2013. Here, too, the word 'safe' was used not *for* the safety of people but rather to maintain the safety *of* commercial actors involved in the online market. The plan also educated people on behaviors that could jeopardize the safety of the EU online territory. These three procedures that produced EU data subjects will be examined in the following sections.

Standardizing Metrics

In the late 1990s and early 2000s, the need to fund the web gave birth to a project led by advertising trade associations. These **new experts** wanted to

clear the mess of multiple **measuring** methods and create standards that would allow advertisers to listen to people's bodies and then categorize, quantify, record their behaviors and, importantly, trade them. They wanted to be able to develop and standardize listening tools, units and capacities. As discussed above, some authorization was already achieved on another front, which was the production and **restructuring of the EU online territory**. The training of advertisers was necessary to institutionalize their profession on the web, and to create standards for the production of data subjects. Standardized metrics and measuring practices also helped in persuading brands to spend money on digital advertising. This was achieved by showing that the web is a profitable business that has wider and deeper listening capacities enabling more accurate and richer profiles and audiences to buy and sell.

The advertising industry has been interested in people's behaviors since its early days. As Adam Arvidsson argues, the production of people's "tastes, habits and preferences—was driven by the publishing industry" (2006: 46). Arvidsson observes that, because publishers were relying on advertising as their main economic source, even as early as the 19th century, they needed more information about their audiences to then sell them to advertisers. Now, more than a hundred years later, publishers rely more than ever on advertisers as they turned to a business model of free content rather than subscription. As Joseph Turow explains, "[i]n the mid- and late 1990s, publishers were in a race to show advertisers who had the most users, and if they wanted that kind of scale they couldn't charge a fee" (2012: 41). But nothing is really free.

As Thomas Novak and Donna Hoffman argue, at that time, the advertising industry's revenue model for the web was still unclear and it was not certain that companies would be able to generate money from advertising. The advertising industry, they argue, lacked "standards for what to measure and how to measure it ... *standardising the Web measurement process is a critical first step on the path toward the successful commercial development of the Web*" (Novak and Hoffman, 1997: 1–2, emphasis in original). Just as doctors had to be trained to listen using a stethoscope, advertising practitioners needed to be trained to use online listening devices. Standard **measuring** practices to examine people's digital bodies were needed to produce data that could be traded efficiently between different types of media practitioner.

To establish consistent, comparable and accurate measuring methods and tools, the IAB in collaboration with the American Association of Advertising Agencies (AAAA), the Media Rating Council (MRC), and the Advertising Research Foundation (ARF) conducted a two-phase project. The first phase was

conducted between May and December 2001, whereby the IAB commissioned PricewaterhouseCoopers (PwC²⁰) to examine several companies and identify the common audience and advertising delivery **measurement** metrics, definitions of measuring units and reporting. The companies that participated in this phase consisted: ad networks and ad-serving organisations (Avenue A, Engage, DoubleClick), destination sites (Forbes.com, CNET, *New York Times* Digital, Walt Disney Internet Group) and portal sites (AOL, MSN, Terra Lycos and Yahoo!). PwC's findings were published to the advertising industry on January 15, 2002, and each company had a choice whether to adopt the **measurement** guidelines proposed.

Phase two was conducted during 2003 and 2004, whereby the IAB processed PwC's findings and drafted standards from these to the whole advertising industry. This resulted in a document, published in September 2004, titled 'Interactive Audience Measurement and Advertising Campaign Reporting and Audit Guidelines'. The list of participants includes international ad servers such as AdTech (Germany), ALLYES (China) and Predicta (Brazil), and other participants such as: 24/7 Real Media, AOL, Disney Internet Group, DoubleClick, Forbes.com, Google, NY Times Digital, MSN, CNET Networks and Yahoo!.

All the companies PwC studied used the same five metrics to measure people's behavior: ad impressions, clicks, unique visitors, total visits, and page impressions. According to the PwC study, the definition of clicking was the most consistent of all the methods, and meant "a user-initiated action of clicking on an ad element, causing a re-direct to another web location. A click does not include information on whether or not the user completed the redirect transaction" (PwC, 2001: 13). The click, as Turow argues, was a "tangible audience action that media buyers and advertisers could use as a vehicle to ease their historical anxiety over whether people notice their persuasive message or, even more, care about them" (2011: 36). Clicking was an action that could be quantified and indicate people's preferences and behaviors across the web. This could then be easily used for trade.

Unique visits are measured by cookies (divided by new or repeated visits) or IP addresses. Both cookies and IP addresses identify specific people and tune in deeper to understand how frequently they have conducted an action to make more accurate measurements. In this way, people's rhythms matter because excessive behavior (repeated visits) which are not tied to a particular person can provide wrong analysis of the amount of people who actually visited that space. This is another reason why it was important to identify people – to avoid mismeasurement. Therefore, being anonymous can actually harm the accurate and credible measurement of people's behavior and consequently the ad industry's business.

Total visits, called ‘sessions’ are determined in various ways, but are mainly calculated by using three time-based rules that the digital advertising industry have developed: *Activity*, which calculates the user’s activity data, *sampling* user activity over several days during a specific period (a measurement some companies outsource), and *statistical analysis* of the behavior (PwC, 2001: 24). In this way, people’s behavior was collected, categorized, and recorded in different temporalities, by different media practitioners according to different **measuring** practices.

Ad and page impressions are measurements of people’s viewing of an advertisement or a web page, respectively, which are listened to by two methods: web server logs or web-bugs. Web server logs are a type of dynamic archive that stores information about people’s activity. These log files are automatically created whenever someone does an action on a website. These actions and those that follow are recorded and, importantly, tend not to be accessible to normal internet users. Using this measuring technique, digital advertisers decide which amount of time can be considered as an ‘activity’—An impression. In this way, advertisers wanted to establish which repetitions have a value, a practice Facebook has developed further in their ad auction, as the next chapter shows.

Bodies that Count

Measuring people’s behaviors was a central practice of the digital advertising industry. Through these measurements, the body and its abilities were conceived. Browsers have been holding a crucial position in this context as they function as devices providing sonic tools for producing knowledge about bodies. At the same time, they *are* people’s body. With this dual function, every browser design choice, and especially default settings, is crucial; it sets the tone of the body. Every feature that browsers are automatically designed to do, directly shape how people can behave on the web.

As discussed above, developers like Montulli identified the power of default settings, and in this section we will unpack why. Browsers are important in introducing new ways to know people and their behaviors and enable redrawing the boundaries between the private and public spaces of their body. The metrics are measured using the technology (cookies, web bugs, and, more recently, fingerprinting) that browsers provide or operate. Browsers enable both the measuring and recording of knowledge, but also accelerate the listening process into milliseconds. This helped in creating different temporalities that can serve content and advertisements in the ‘real-time bidding’ (RTB) market (more on RTB below).

Contrary to the previous chapter, where Bell developed and maintained the media technology apparatus, when it comes to the web, the measuring devices and units, as well as the infrastructure of each of these fields is controlled and managed by different companies. The metrics are measured using the technology that browsers provide or operate, such as web server logs and cookies. Advertising content and technologies (such as cookies, web-bugs, pixels) are sent to people by either the first- or third-party server or the client. In this way people's bodies are being penetrated by various technologies to measure and record as much data on them as possible. These measurements are conducted continuously, because the more you know, the more you can monetize.

Bringing back the dilemma of accuracy of **measurement**, the digital advertising industry was conflicted on how to measure which bodies are human, and therefore should count. The IAB pushed for the client-initiated method of measurement, which relies on the user's browser, to become the standard. As the IAB argues, this method creates a direct connection between people and the ad server, it requires:

[C]ounting to use a client-initiated approach; server-initiated ad counting methods (the configuration in which ad impressions are counted at the same time the underlying page content is served) are not acceptable for counting ad impressions because they are the furthest away from the user actually seeing the ad. (2004: 5)

Considering browsers to be more precise in indicating people's actions and reactions to content established them as the standard measurement device. Here the notion of the body becomes complicated. Usually, people come to practitioners on their own initiative to solve some kind of bodily malfunction. In the case of digital advertisers, the person's body 'requests' to be listened to, but without her knowledge. This was made possible by the browser's default settings, which creates a situation in which people technically request their bodies to be listened to. Yet most people have no idea that such practices are being conducted.

Just as physicians need to get closer with a stethoscope to people's bodies to listen accurately to the sounds they make and understand the malfunction, here, too, people's computers operate as their bodies. Getting closer to people through their browsers allows for closer listening and tuning in to measure their actions across the multiple spaces they navigate more precisely. It also allows the digital advertisers to listen to bodies over different periods of time, deciding which ones will be considered as a human action. This standardization meant that people's computers functioned as their bodies *and* the measuring devices that listen to their

behaviors and malfunctions. However, people were given limited mechanisms to examine their own bodies, while media and advertising practitioners could diagnose them using sonic tools.

When people perform any action on the web (even if it's silent and does not have any visual cues such as hovering over an item or spending a long amount of time on an article), their browser sends a request to have the behavior of the person tracked by three technologies, called 'tracking assets': one, web bugs (discussed above); two, an HTTP 302 request initiated by the browser when a user requests an image or rich media from the server by clicking on them (this is an independent request sent to an ad transaction logging server and might also send a web bug); three, delivery of the ad content. Furthermore, "[o]ne tracking asset may register impressions for multiple ads that are in separate locations on the page" (IAB, 2004: 6). This is how people's behavior in multiple location on one webpage is being listened to. Here the advertisers tune in deeper, trying to figure out how people engage with ads and content on a particular webpage.

The advertising industry measures people's behavior and renders it as data, objects of knowledge to mold, control and monetize. These measuring tools also help in knowing which websites, content and ads are more popular in terms of the number of people who make actions on them and, consequently, differentiate these spaces with higher rates.

In this context, processed listening is applied to individual²¹ bodies through people's browsers to create profiles. But at the same time digital advertisers also search for audiences behaviors, listening to statistically measure the way groups of audiences behave in specific repetitions. Listening in these micro and macro levels simultaneously enables digital advertisers to create more accurate profiles and segments according to perceived preferences or personal traits. Examining the surveillance practices of the advertising industry on the web, Campbell and Carlson (2002) suggest that the commodification of people's privacy in exchange for people's ability to participate on the web converts them into economic subjects. They argue that privacy laws have detached information about people as objects and in opposition to individuals. Producing people as fragments of data to be recomposed into specific profiles is also carried out as part of the digital advertising practice itself. Here the code becomes the law. As Campbell and Carlson observe:

[C]onsumer profiles constructed from our social positionalities—that is, on the basis of race, gender, age, class, education, health, sexuality, and consumptive

behavior—become our economic selves, reflecting our value within a commercial society ... effective classification equates with predictive utility the more precisely a marketing firm can classify an individual as a potential consumer, the more effectively that firm can predict (and manipulate) an individual's consumptive behavior. Ultimately, predictive utility allows marketers to reduce the risk producers face in the marketplace. (Campbell and Carlson, 2002: 596)

People's behavior, therefore, is paramount for the smooth operation of these multi-layered communication channels and multi-sided automated markets. Listening to these behaviors and creating profiles and audiences can help the digital advertising reduce their uncertainty and predict their suitable matching to particular products, services, and spaces. As Bhat et al. argue, advertisers want to know the efficiency of their targeting practices, "whether their users' actual profiles match desired profiles. Knowledge of current users' profiles also enables advertisers to be more effective in future targeting efforts" (Bhat et al., 2002: 105). This is the reason why any behavior that can damage or confuse the accurate **measurements** of behavior must be controlled and avoided.

A problematic aspect of measurement for advertisers are bots (also called crawlers and spiders²²), bodies that interfere with accurate measuring and the production of data subjects. This is similar to medical professionals who need to specialise in using the stethoscope, by navigating in "an initially confusing world of sound by differentiating the sounds of the patients' bodies from the sound produced by the tool itself and the sound of their own body" (Supper and Bijsterveld, 2015: 10). In digital spaces, the confusion goes further as advertising practitioners need to distinguish between human and non-human behaviors. Because the web is filled with robotic behaviors, it is necessary to make a distinction between them for accurate measurements to enable efficient trade in the online advertising display market.

To avoid measuring non-human traffic and maintain accuracy and consistency, the IAB developed guidelines for what it calls *filtration*. Advertising practitioners carry out this rhythmedia through three main **filtering** methods: 'basic' techniques, identification of specific suspicious nonhuman activity, and pattern analysis of people's activity. In the basic technique, advertisers use robot.txt files "to prevent 'well-behaved' robots from scanning the ad server" and exclude behaviors "from User Agent Strings²³ that are either empty and/or contain the word 'bot'" (PwC, 2001: 29). With the specific identification approach, non-human traffic is identified through the IAB Robot List. By cross checking with that list, digital advertisers are able to exclude known and authorized robot traffic from **measurements**. According to the IAB, companies need to exclude

automated page refreshes and also disclose their internal robotic traffic; for example, IT personnel testing features on websites. In this way, advertisers should be able to identify excessive behaviors associated with previously identified ‘well-behaved’ bots or maintenance behaviors, and exclude them from the measurement procedure. Similar to physicians, advertisers produce knowledge that establishes what constitutes a ‘healthy’ (human) body which should be counted, and what should not be counted.

In the third technique, the activity-based approach, advertisers are obliged to take measures against ‘new’ robotic or non-human activity by analysing server log files data: “Activity-based filtration is critical to provide an on-going ‘detective’ internal control for identifying new types or sources of non-human activity” (IAB, 2004: 7). This method tries to analyze and detect new behaviors which sound human, but are, in fact, non-human. Advertisers monitor for problematic rhythms on the web in order to establish what is considered human. Some advertisers use advanced behavioral **filtering**, which defined rules characterizing robotic behavior as a body that clicks more than 50 times during a day (PwC, 2001: 29).

Advertisers are encouraged to listen to server logs, which helps to identify abnormal behaviors in four main ways: identifying people who are performing multiple sequential activities; people with the highest levels of activity; people who act in consistent interaction attributes; and ‘other suspicious activity’. Any behavior that deviates from the norm is under suspicion of being non-human—a bot.

As these methods indicate, abnormal behaviors are categorized according to frequency, repetitions, and other time-based movement variations which deviate from the norm. These thresholds have been established from an ongoing processed listening to people’s behaviors across multiple spaces on the web. Importantly, these four criteria also imply that there are guidelines of specific ‘legitimate’ bodies’ behavioral traits. These filtration guidelines standardize the distinction between human and non-human behavior on the web. According to such standards, the way humans behave is categorized as inconsistent, low-level (repetitive) activity and sporadic singular activities. Human rhythms are standardized.

Importantly, the issue of filtration points to the difficulty of measuring accurately and the need to control and manage people’s behavior to avoid mistakes in calculations. This is precisely why it was so important for the advertising industry to make spam illegal through legislation, and the reason why spam’s characteristics in legislation were ‘automated’ and categorized as ‘bulk behavior’. Such non-human behaviors can damage the advertising industry’s ability to make sense of their measurements, and therefore, risk creating inaccurate profiles and audiences. Therefore, making spam illegal is a regulatory tool that serves to control both

people's behaviors and advertising or technology companies that do not comply with these online market territory standards.

Measuring people's behavior is part of an online market called 'online display advertising' which is happening at the back-end of people's browsers to decide what, when, and where to 'display' things at the front-end of each person, or in advertising terms—profile. It is a multi-sided market where advertising networks argue that they trade 'inventory', advertisement slots. However, another thing that these ad networks trade are people, or as IAB calls it 'audience buying'. This means that the 'cookie communication' is conducted between advertisers and publishers, while the 'message' is people's behavior measured in standardized quantitative units, and rendered as data. One of the outcomes of this communication is the placement of an ad that matches the supposed person's profile and behavior suitable for that particular place and time, and it happens within milliseconds.

The rhythm of communication in this online market accelerates as non-human actors are introduced into the multiple channels in the back-end. The advertising industry, led by the IAB, standardized both people's behaviors and advertisement sizes,²⁴ by filtering, removing, and excluding these disturbances. In doing so, they reproduced people and spaces to create optimized options of living in structured architectures, a new commercial territory. Ad networks create multi-layered automated communication channels that operate by monitoring, measuring, categorizing, recording, and archiving people's online behavior. Both people *and* spaces are **measured**, to produce a dynamic archive and determine which actions and architecture design are most economically beneficial. Hence, while the fast-rhythm communication channels were legitimized as sound, other high-tempo communications were constructed as noise and categorized as spam, and, consequently, criminalized.

Bidding for Real-Time

Advertising networks were later supplemented by ad exchange to expand the new automated market and increase the rhythm's pace. According to IAB UK, ad exchange, which started to appear in 2005 as a service offered by a company called Right Media, is an:

Online auction based marketplace that facilitates the buying and selling of inventory across multiple parties ranging from direct publishers, Ad Networks and Demand Side Platform (DSP). These automated marketplaces enable sellers to monetise inventory via acceptance of the highest bid from buyers. (IABUK, 2005: 13)

These trading practices use Real-Time-Bidding (RTB) automated bidding, a multi-layered system that started in 2010, trading people's profiles and audiences (knowledge) in 'real-time'. But the way that time and space are reproduced in this algorithmic rhythms at the back-end of this ecosystem is not mimicking real-time.

The concept of 'real-time' can be traced back the term—'Real-Time Processing' and linked to John von Neumann's 1940s computers architecture that separated the computer's processor and storage. As Robert Gehl (2011) argues, this design was a specific orchestration between the 'immediate' that was the processor or CPU, and the 'archive' where the storage of data was kept as a sort of memory. In this architecture design, different computation instructions retrieved pieces of small data from the archive to provide different output configurations. As Gehl shows, "the processor focuses on speed and discrete operations. It manipulates small chunks of data as quickly as possible, moving sequentially through each element of complex equations" (Gehl, 2011: 1230). By the 1960s computer designers aspired to create an experience whereby the computer immediately reacts to people in 'real-time', creating a feeling of instantaneity which conceals the procedures in the 'back-end'.

Trying to create the feeling of immediacy while concealing the procedures happening at the back-end is exactly what the practices processed listening and rhythmmedia are about. It is about silencing and automating decisions about how media is conducted and creating a feeling that things are happening in real-time, with no intervention. But quietly in the back-end of media systems, media practitioners conduct processed listening—monitoring, measuring, recording—to produce a dynamic and ever-growing archive from people's behavior. Once this knowledge is produced it is ordered—categorized, filtered, and 'displayed' in a particular way. In this case, there is no one archive and one processor, it is personalized to each person's profile. The multiplicities of actors, spaces and temporalities is what makes processed listening and rhythmmedia more suitable to the online ecosystem. In this ecosystem, there are multiple media actors, human and non-human who are repetitively (re)produced.

In RTB, new actors join this mix—Demand Side Platforms (DSP) and Supply Side Platforms (SSP). DSP is a centralized management platform technology for advertisers and companies allowing them to buy audiences in an auction across multiple suppliers. SSP is a centralized platform technology for publishers who sell audiences and spaces (the supply) to advertising networks, advertising exchanges, and DSP. The extra layers of communications created by ad networks and exchanges, as well as DSP and SSP, are mainly facilitated by third-party cookies. They create a new territory for financial trade that functions in a separate

time and space. Therefore, the name ‘real-time bidding’ is misleading because the system that operates it creates different temporalities, accelerated rhythms for trade which are so fast that humans cannot comprehend or notice them.

In this way, the type of things (content and ads) and options that people engage with, and the timing when they will be ordered change according to their behavior. The ordering changes according to the rhythmmedia that is the most profitable for the advertisers. This means that what affects the ordering of advertisements in a particular place and time depends on the suitable audience (combining data subjects’ profiles, their online behaviors, geographical location and more), as well as the highest bidding for that slot. RTB, which relies on ‘real-time processing’, disguises the fast-rhythm decisions that happen at the ‘back-end’ by non-human actors, to order the ‘front-end’ human experience. A frictionless experience of asymmetric power.

RTB started as a pilot project in November 2010 by IAB and other advertising technology (commonly called ‘ad tech’) companies who were called the ‘Open RTB Consortium’. Shortly after its inception, the name was changed to the ‘RTB Project’. In January 2012, the Open RTB API Specification version 2.0 was released to set an industry standard for the automated trading of the online environment. This standard involved more than 80 ad tech companies and intended to make the communication between them more efficient. The standard aimed to incorporate the support of features such as display mobile and video in one document. As the IAB say:

The protocols outlined in this document should be considered guidelines, not absolute rules. The overall goal of OpenRTB is to create a *lingua franca* for communicating between buyers and sellers. The intent is **not** to regulate exactly how each business operates. As a project, we aim to make integration between parties easier, so that innovation can happen at a deeper-level at each of the businesses in the ecosystem. (IAB, 2012: 3)

The digital advertising industry wanted to create new communication channels that would talk to each other in the same language to bridge between the multiple advertising companies involved in this new ecosystem. Importantly, the digital advertising industry aimed to standardize its profession by not making specific rules but rather making the practices involved more economically efficient and more flexible. As always, the advertising industry showed that it is allergic to the term (and practice of) regulation, because it hinders ‘innovation’.

Outlining the data needed for bidding, the IAB indicates that it is recommended to have several objects which provide detailed information about

the user: The ‘device object’ provides information on the kind of device the person who gets the ad uses, such as mobile phone, computer hardware, the device model, the device operating system and its version, and carrier or ISP. The ‘user object’ provides a description of the user including unique identifiers such as year of birth, perceived gender, and keywords of interests. The ‘geo object’ gives description of the device’s location according to IP address, GPS or home geography of the user according to registration data, including country, city, ZIP/postal code (IAB, 2012: 14, 30, 31). These specifications for trade illustrate how processed listening is conducted to assemble as much data on people as possible to be able to tailor ads for the preferences that fit their profiles.

This rhythmmedia is done according to specific times and spaces across the web where ads fit according to the highest bidder. Auctions are required to be conducted in a specific time, termed *tmax*, which has to be indicated in the bidding request in milliseconds: “e.g., 120 means the bidder has 120ms to submit a bid before the auction is complete”. This parameter shows how there is nothing ‘real’ in RTB and that people’s online experience is ordered according to the highest bidder. It also illustrates how the ‘back-end’ has its own temporality, too fast to regulate or monitor by regulators, journalists, scholars, and sometimes even the advertising associations themselves.

The latest OpenRTB 3.0 Framework came out as a draft for public consideration on September 2017. One of the features proposed in this standard is Consumer Identifier Support, which aims to use audience data in RTB, and “to solve for diverse use cases around identity including: Support for cross-device models in bid-stream, Allow for the ecosystem of ‘single IDs’, People-based identifiers of all types” (IAB, 2017: 30). The problem in **measurement** arises with the fact that people use multiple devices and hence the difficulty of identifying their bodies for consistent monetization is at the core here.

However, as a recent EFF report indicates (Cyphers, 2019), some advertisers conduct “shadow bidding” because the information about people’s profiles is sent during the bid request but before the money goes to the ‘winner’. In this way, advertisers still get information about people and can enrich their database. “Certain companies may pretend to be interested in buying impressions, but intentionally bid to lose in each auction with the goal of collecting as much data as possible as cheaply as possible” (Cyphers, 2019). People have been cheaply traded, but the cost of this market has not been thoroughly processed, and people’s lives are at stake.

Even before RTB, timing in advertising was important. As Campbell and Carlson show in their analysis of the advertising network, in the late 1990s and

early 2000s, DoubleClick developed a technology called Dynamic Advertising, Reporting and Targeting (DART). After processed listening to people's behavior, rendering it into data, and assembling initial profiles, DoubleClick aggregated their behaviors into 'real-time' reports. The slogan promoting DART stated that it is a technology that "enables you to deliver the right message to the right person at the right time" (Campbell and Carlson, 2002: 598). As the slogan suggests, the right people and the right timing were key to ordering this online trading territory. But the 'right' people, spaces and timing are not naturally existing, just waiting to be sorted. Rather, they are produced by a specific rhythmmedia conducted by the digital advertising industry, which orchestrates and **filters** whoever and whatever do not fit into its business model.

All these multiple layers of communication channels work in a recursive feedback loop, whereby people are the starting and end point—people's actions are monitored, **measured**, and archived in specific categories (according to criteria such as gender, age, location, preferences, marital status, health status), then rendered as input objects/data. This data is communicated through cookies, thereby becoming messages in the automated market trade conducted by ad networks, ad exchanges, DSP and SSP. The accelerated rhythm of RTB, is based on algorithms that make predictions based on inputs given by cookie communication about the kind of profile that might fit a tailored advertisement. The output is ordered in a specific location and time on the publisher's standardized space that is supposed to suit the profile of the target user, the 'right' rhythmmedia. The data subject is fed back with content and arrangements through generating dynamic web pages and advertisements that are supposed to fit them, according to the highest bidder. By the end of the 1990s, as Lev Manovich observes:

Every visitor to a Web site automatically gets her own custom version of the site created on the fly from a database. The language of the text, the contents, the ads displayed—all these can be customised by interpreting the information about where on the network the user is coming from; or, if the user previously registered with the site, her personal profile can be used for this customization. (Manovich, 2001: 60)

Publishers and advertisers listen to people in various spaces to establish a profile and then reorder the website according to this profile and what is associated with the audiences that the profile relates to; a personalized experience. This rhythmmedia happens within milliseconds which is what creates the 'real-time' experience despite the many processes involved to create this immediacy sensation. All this happens at the 'back end', covertly, without people's knowledge. In

this way, the IAB's **measurement** standards documents provide the new media practitioners—digital advertisers—with training guidelines on the use of listening devices and the way to listen to people's digital bodies. At the same time, it produces the personalized experience as the preferable one for people, while disguising the cost behind it.

IAB's guidelines train different actors within the online market chain (advertising networks, advertising associations, advertising companies, data brokers, and publishers) on how to conduct *processed listening*. It teaches them how to listen to different digital bodies by using several tools (server logs, IP addresses, cookies, web bugs), at different times, to produce data subjects that they can monetise. This involves collecting, categorizing, archiving, and **filtering** data extracted from users, which can be done in different temporalities to produce subjects (knowledge) and the territories with which they engage.

As with most research, the most interesting things happen while you are trying to submit your book to your publisher before the deadline. In June 2019, The UK Information Commissioner Office (ICO), the regulator responsible for data protection, released their updated report on ad-tech and real time bidding. As they argue:

Finally, RTB also involves the creation and sharing of user profiles within an ecosystem comprising thousands of organisations. These profiles can also be 'enriched' by information gathered by other sources, eg concerning individuals' use of multiple devices and online services, as well as other 'data matching' services. The creation of these very detailed profiles, which are repeatedly augmented with information about actions that individuals take on the web, is disproportionate, intrusive and unfair in the context of the processing of personal data for the purposes of delivering targeted advertising. In particular when in many cases individuals are unaware that the processing takes place and the privacy information provided does not clearly inform them what is happening. (ICO, 2019: 20)

Although the ICO found the advertising industry violating many data protection issues (according to the General Data Protection Regulation became enforceable in May 2018), the enforcement remains 'soft', as the conclusion of this report is made to 'express their concerns' and expect the industry to 're-evaluate their practices'. Such mechanisms, like the ICO and other data protection regulators, are meant to make citizens feel that their rights are protected whilst in reality their enforcement tools are limited. The self-regulation model of the advertising industry enables an online territory where everything goes and people are up for the highest bidder.

One of the main arguments of the advertising industry against claims of surveillance and privacy is that people are empowered by experiencing personalized spaces, engaging with content and things they are interested in. As the advertising industry argues, people are given a free choice and abilities control through various design mechanisms. But, as will be shown in the next section, ‘user control’ and autonomy have different meanings and functions to different actors.

User Control to Control Users

As the web developed, people were given more tools to control and manage their mediated experience. In 1997, the IETF working group, led by Montulli and Kristol, mentioned above, recommended that people should have control and the ability to decide for themselves on the way their bodies communicate their behaviors. As they argue, “[u]sers may object to this behavior as an intrusive accumulation of information, even if their identity is not evident (Identity might become evident if a user subsequently fills out a form that contains identifying information)” (Kristol and Montulli, 1997: 15). They recommended that browsers should have a visual display of such forms of communication, which, as Netscape showed with its development of SSL, is possible to do. Imagine a split screen on your browser, similar to adblocking software or tracking monitors such as Firefox’s Lightbeam or the EFF’s Privacy Badger. This would enable people to (partly) listen to what is happening in the back-end, to inspect their own bodies and reveal the multiple chords (cookies) connected to their bodies, as well as their sources. Now imagine this was the default setting from the late 1990s. Keep this thought with you while you read this section, it will help you listen to the distortions in the stories of the advertising industry.

By creating a default whereby browsers accepting first- and third-party cookies, and relying on the fact that people usually do not configure those preferences, this control tool was designed to persuade people to open their bodies for inspection by anyone that could. Instead of enabling people to control their own experience, it was a mechanism developed by the advertising and technology industries that did the exact opposite. In this way, first- and third-party cookies enabled these industries to processed listen into (measure, collect, record, and archive) people’s online behavior. People’s lives on the web became objects of knowledge that were used by various media practitioners for various purposes.

The pressures from the digital advertising influenced the way the cookie standard was baked into the web’s design. Montulli and Kristol’s tone regarding

the IETF cookie standard changed between the versions. Their 1997 proposal suggested that browsers should ask people whether to create a ‘stateful’ session, saying the default should be ‘no’. In the 2000 version, their version was much softer and lenient towards browsers’ defaults. In that version, they argue that, “[i]nformed consent should guide the design of systems that use cookies” (Montulli and Kristol, 2000: 18). Presenting ‘informed consent’ as a form of people’s expression of control and autonomy was a way for tech and advertising companies to manage people’s behavior, and to train them on what they could and especially could *not* do through browsers.

The issue around spam and whether communication is ‘unsolicited’ shows how people’s autonomy on the web was framed as a binary option, boxed into consent or not. This was a way to control the way people behaved on the web but also, importantly, to train people to think that these were the only two options. Rather than asking what other things people could do in this territory, EU policy, which was influenced by lobbyists from the digital advertising and tech industries, focused on debates about how people expressed consent. In doing so, the EU legislation discourse on behaviors on the web was narrowed into standardized and automated architectures provided by browsers. In fact, it was not until 2011 that the A29WP published a document clarifying the meaning of consent; its key characteristics are: ‘indication’, ‘freely given’, ‘specific’, ‘unambiguous’, ‘explicit’ and ‘informed’. As the EU legislators ‘found out’, it is more nuanced and complex than binary consent or not. As the A29WP argue:

The autonomy of the data subject is both a pre-condition and a consequence of consent: it gives the data subject influence over the processing of data ... The data controller may want to use the data subject’s consent as a means of transferring his liability to the individual. (A29WP, 2011: 9)

Inspired by western liberal thought about freedom, the definition of consent always assumes a rational person making decisions based on all the information and facts available. But in the online territory, to make an informed consent people need to know how the ecosystem works: How is this ecosystem funded? Which companies are listening to their bodies? What is the value of their behaviors (data)? What kind of data do these companies use and for what purpose(s)? How might that affect people in the near and far future? How much time will this data be used for? Will this data be used in other contexts and by other companies? And much more. But even technology savvy, and technology companies’ CEOs such as Mark Zuckerberg²⁵ have argued that they do not know how their systems work, so how can we expect people to make ‘informed’ decisions?

People make decisions according to their emotions, cultural background, education, cognitive abilities, financial situation, family history, different media representations they engage with, health condition, religious beliefs, gender identity and many other parameters. To assume that a decision can, in the words of EU legislation be “freely given” and “informed”, is misguided and simply wrong. As Foucault argues, “freedom of behavior is entailed, called for, needed, and serves as a regulator, but it also has to be produced and organized” (Foucault, 2008: 65). As the 2016 USA presidential election and 2016 UK Brexit referendum show, many important decisions can also be influenced by micro-targeting. Thanks to the design of online platforms, which conceal what happens in the back-end, these messages are tailored, personalized and targeted through computational procedures to influence people’s behavior. And these are far from rational or informed, as some reports indicated that many people searched for what the European Union means after the UK Brexit results were announced (Fung, 2016).

Consent has traditionally been used as part of a contract. You sign a contract for a house, job, or insurance, as an indication that you agree to the conditions of the product, service, or employment. Whereas these contracts are static and usually deal with one particular aspect of your life, online contracts are far from it. In fact, it will take you days, if not weeks, to read the terms and conditions of all the contracts of the online services, platforms, and apps you use (Hern, 2015). I should know, because to do the research for this book I read and archived different section on Facebook’s terms, and that was when I focused on particular aspects, not all of the terms. The more I read, the more I discovered other subsections, it was never-ending. Even if you do read all these terms, and manage to understand all the legal jargon used, online services frequently change their terms without notifying people. In this way, people have no way of engaging with and understanding what they actually consent to.

Even if you do manage to make the time and read all the terms, and companies will follow the recent GDPR’s Article 12 which requires them to be transparent about their procedures, it is still not enough to make an ‘informed decision’. Studies from the end of the 1990s until today show that most EU citizens do not know about the existence of cookies, their management mechanisms, or how they work, and are worried about their personal data being used by third parties without their knowledge or consent (Eurobarometer, 1997, 2003, 2008; Smit et al., 2014). As Andrew McStay, who examines the revised e-Privacy Directive (2009/136/EC), argues, “[t]he simple truth is that most people do not understand the mechanisms through which behavioral advertising works” (McStay, 2013: 600).

This inability to make sense of online contracts is what Mark Andrejevic calls the ‘data divide’. As he argues, “putting the data to use requires access to and control over costly technological infrastructures, expensive data sets, and the software, processing power, and expertise for analysing them” (Andrejevic, 2014). In short: we simply cannot understand how processed listening and rythmedia work and especially what happens in the back-end. We do not have the processing abilities and big (advertising) tech resources to understand the soundtrack of this online market. And here lies the power of being able to *conduct*, *know*, and then to *produce* what is happening at all the multi-layers of these mediated territories.

Consent then, is used to transfer responsibility to individuals, while presenting it as a control mechanism that people can use over their own data, meaning their own bodies. As Becky Kazansky argues, this kind of ‘responsibilization’ is “[e]ncouraging an emphasis on the individual as the primary locus of responsibility for protection from harm ... [and has] the convenient effect of deflecting attention from its causes” (Kazansky, 2015). Another reason is that it makes us legally responsible for our actions, something that benefits commercial and governmental bodies.

The notion of ‘consent’ naturalizes and normalizes digital advertising and technology companies’ terms of use for their technologies and services. It teaches people the boundaries (actions and spaces) that they can operate in. This is the shift from ‘power over’ as Foucault presented in sovereign mode of governmentality and, to a lesser extent, discipline, into other forms of power ‘from below’ in the shape of biopower. Consent is a control mechanism portrayed as agency, but gives **license** to these industries to redraw the boundaries of people’s bodies and the territories in which they live. It also marks the boundaries of what people can demand and expect from commercial actors and state regulators. This signals that what people could do on the web was not open for discussion, negotiations or multiple options. Portrayed as control, autonomy and power, responsibility was moved from the service or technology providers to people, who were presented as responsible for their actions because they were expected to be informed about all the repercussions of such a decision, as rational beings.

As Greg Elmer shows in his research on Netscape’s Navigator and Communication web browser versions, this disruption to people’s online behavior and experience has been an ongoing practice since the late 1990s: “Internet users who exert their privacy rights in cyberspace by disabling their browser’s cookie preferences also significantly disable the Web’s ability to offer them convenient services and relevant information” (2003: 117). Thus, the introduction of user control tools for expressing power or autonomy online was limited and managed by tech and

advertising companies' design and standards. It constructed a rhythm of repetitive movements and helped in **training people's bodies** as data subjects and their limited options of living on the EU web.

The 'control' narrative creates a contradiction, as Robert Gehl (2014) argues, because the IAB and other advertising trade associations present the subject they produce as a 'sovereign interactive consumer'—a free, autonomous and powerful self-manager when it comes to their choices on the internet. This subject is free to choose to be educated about advertising practices and go to the preference section in their browser to change the default setting. The subject is in control of their online life. As Gehl argues, "if the sovereign interactive consumer *chooses* to be educated, to understand the workings and benefits of behavioral advertising, the IAB is ready. If not, so be it" (Gehl, 2014: 109). As Gehl points, if the subject does not know about these things, then the IAB will not help educate them. In that case, it will be the subject's fault if anything related to their online behavior and profiling causes them harm in any way. Knowing is power, and here what each player knows, how deep they can listen and produce knowledge (data subjects) comes hand in hand with people's lack of knowledge about what happens to their bodies. As will be shown in the next section, the topics that EU citizens were taught through educational programs were meant to help the safety of commercial actors, not to know how things work. In this way, 'control' is a narrative tool meant to control people behavior and understandings of how the web works.

Keep Your Body Safe

An important step in creating the EU data subject was education. In the sections above, some of the educational tools were applied through architecture and design. This helps to **train people's bodies** to behave in repetition and shape their thinking and understanding of what they can do and what their responsibility is within this territory. Here, the production of data subjects continues in the shape of educating EU citizens on how to use and understand the internet in a particular way, highlighting the ways to make it more economically efficient. EU citizens are taught about **filtering** tools, rating systems, and hotlines to report bad behaviors of other. The soft-law approach meant that these technical mechanisms were designed and operated by other players in the EU—internet industry, the ISPs, and copyright holders.

In a recent report Doteveryone, a British Non-Governmental Organization (NGO) examined people's understanding of the internet. As the organization argues, "Digital understanding is not about being able to code, it's about being

able to cope. It is about adapting to, questioning and shaping the way technologies are changing the world” (Doreveryone, 2018: 5). According to the organization, there is a lot of focus on ‘digital skills’ (especially access) in the digital divide/inequality debate but little attention to understanding of these technologies. We do not need to know how to read code or algorithms but we do need to understand who has access to our data and more importantly how the internet shapes our lives.

As this section shows, the European Union did develop education programs, but these were not meant for people to understand how the internet works. These educational programs have helped to cement and institutionalize EU citizens’ roles as consumers and products in the online market territory. Although framed as ‘safety’ education for people, the material that EU citizens were taught was mainly about maintaining the safety of all the organizations that create, manage, and control the internet: governments, copyright holders (of various types of content), ISPs, publishers, digital advertisers, browsers and others.

The Safer Internet Program that the European Commission developed was presented as if it is meant to keep the citizen safe. Ultimately, it meant to educate and **train people’s bodies** how to behave, think and understand their positions as both data subjects but also as communication channels that need to monitor and **filter** other people’s unwanted and problematic behavior and content. This was done by providing citizens with controlled listening tools to identify and police their peers’ deviant behaviors. Similar to the questionnaires the NAC circulated, these tools came with pre-decided categories of what is deviant, illegal and harmful. In this way, just as NYC citizens were encouraged to report noisy people, EU citizens were encouraged to listen and identify noisy behaviors and report them through special hotlines. These education programs were primarily designed for children in schools. This was a way to start **training the digital bodies** of children from a young age about their role within the online EU territory, and, even more importantly, not to teach them other ways of behaving that might turn out to be problematic.

The first document that paved the way for the Safe Internet Programs was the European Commission’s communication on *Illegal and Harmful Content on the Internet* from October 16, 1996. This document was one of the first discussions presenting the EU’s attempt to control and govern the internet. Importantly, the document made clear that previous definitions of illegality persist on the internet:

As regards the distribution of *illegal content* on the Internet, it is clearly the *responsibility of Member States to ensure the application of existing laws.*

What is illegal offline remains illegal online, and it is up to Member States to enforce these laws ... the presence of illegal and harmful content on the Internet has *direct repercussions on the workings of the Internal Market*. (Commission of European Communities, 1996: 4, emphasis in original)

This means that the legal framework remains the same and that any illegal activity that was outlined in EU or national laws persists. Additionally, older media forms and their associated laws, including copyright and distribution contracts, as well as all member states' authority to decide on what is legal and illegal on the EU internet, persist. This can also be illustrated in the main concerns the European Commission pointed out, which included protection of reputation and intellectual property. Keeping commercial bodies protected was essential. The European Commission highlighted the huge advantage the internet has for the advertising and marketing industries. As it argued, “[b]ecause of its interactive nature, and the immediacy and ease of communication, advertising messages can be targeted at audiences much more precisely than has been possible until now, and feedback obtained from current or potential customers” (Commission of European Communities, 1996: 6). This is an indication that, even at that early stage, the EU was aware of the practice of targeting people individually and turning their behavior into knowledge and commodity to enable advertising and marketing industries to support the internet’s funding.

According to the document (Commission of European Communities, 1996), it is important to separate illegal from harmful content as these are different categories that require different legal and technological solutions. While illegal content is mostly linked to pornography and copyright material, when it comes to defining what exactly the European Commission means by ‘harmful content’, there is no clear definition. The only point mentioned is that this kind of content depends on cultural differences and, therefore, each member state can decide what is harmful according to its own cultural values and ethical standards. Similar to the discussion above on the lack of clear definitions of spam within legislation, here again, some terms are not defined and, under the soft law approach—this power is delegated to commercial actors. In this way, commercial actors are authorized to form the categories and definitions of what constitutes illegal and harmful content, and then regulate and enforce it.

One of the most important points in this document is about the education of all actors in the then new online territory to behave according to their roles: “in this highly decentralised Internet environment, *Internet Users have a very important role to play* in contributing to industry self-regulation” (Commission of the European Communities, 1996: 14, emphasis in original). Part of the people’s

role is to detect and report illegal and harmful content to ‘hotlines’. By doing so, people operate in a similar way to the telephone operators, as feedback loops helping to improve and stabilize the online trade territory. Just as the telephone operators were given controlled listening capacities to monitor each other through *Hear Yourself as Others Hear You* and counselling, here, too, people are advised to use hotlines as a peer-disciplining tool. This, the document argued, would be more effective after public education, which would include awareness activities to train people to understand how to behave on the internet. Such ‘solutions’, under the soft-law approach, gave a **license** to commercial actors to define illegal and harmful categories according to their economic interests.

The Safer Internet Action Plan started in 1999 and consisted of three programs: the Action Plan for a Safer Internet 1999–2004 (276/1999/EC), the Safer Internet Program 2005–8 (Safer Internet Plus) (854/2005/EC), and the Safer Internet Program 2009–13 (1351/2008/EC). The main objective of the Safer Internet action plans, according to the European Commission, was to promote and facilitate a safer environment for the development of the internet industry, as well as fighting illegal and harmful content. These were done in three main ways: one, creating a European network of hotlines and encouraging industry self-regulation and codes of conduct; two, producing **filtering** tools and rating systems; and three, raising awareness by educating citizens on how to use the internet in a safe way. The implicit aim of these programs was to train people to become efficient consumer subjects.

As the previous sections showed, part of the education program was through an individualizing design, promoted as ‘personalization’, and these education programs continue this project. The European Commission argued that it was desirable for people to be identified because although they are entitled to freedom of expression, people need to be accountable for their actions. Therefore, they need to be ‘legally traceable’ and this should be part of the European Code of Conduct. As with consent, which carried the liability onto individuals, here again it was important to train people to this role and the responsibility it carries with it. But people also need to be economically traceable to be tradable.

The European Commission argues that there needs to be a balance between the legitimate need for people to sometimes be anonymous, together with the need for them to be legally traceable. This reaffirms that the EU and media practitioners should be able to conduct processed listening to people’s behavior across the web for similar reasons. This justification gave them **license** to redraw the boundaries of people’s bodies. While the EU wants to be able to identify possible criminals and other problematic citizens, copyright holders want to catch

people who pirate their material, and other technology companies want to create profiles that are linked to specific individuals across the web. This prescribes limited ways of using the web that benefit authorities and commercial companies to link people to their ‘offline’ and ‘online’ identities (a strategy that Facebook will continue, as will be shown in the next chapter).

On January 25, 1999, the European Parliament approved the decision (276/1999/EC) to adopt a Multiannual Community Action Plan to promote safer use of the internet by combating illegal and harmful content on global networks. The program was set to run between 1999 and 2004. This Act promoted industry self-regulation, to create a frictionless competitive environment for the industry. As with the ‘control’ slogan, ‘safety’ was used here to maintain the digital industries’ stability and carry on the same benefits these yielded offline into the online territory. People’s safety was sold as ‘awareness’ of the things they should care about and categorize as deviant, spam, or noise.

The Safer Internet Plus Program was approved on May 11, 2005 and ran until 2008. This program stretched the scope of illegal and harmful content and included unwanted content by end-users, including unsolicited communications. This action plan was not so different from the previous one. One of the objectives of this program was “stimulating consensus and self-regulation on issues such as quality rating of websites, cross-media content rating, rating and filtering techniques, extending them to new forms of content such as online games and new forms of access such as mobile phones” (854/2005/EC). This was an attempt to map and categorize the EU online territory in a consistent way, but since most of the categorization was delegated to commercial actors, it made the online EU territory business friendly. One of the changes here, at least in terms of ‘action 4—awareness raising’, was that:

Awareness-raising actions should address a range of categories of illegal, unwanted and harmful content (including, for example, content considered unsuitable for children and racist and xenophobic content) and, where appropriate, take into account related issues of consumer protection, data protection and information and network security (viruses/spam). (854/2005/EC)

Here, there is an attempt to go beyond merely illegal content, but it is not clear in what ways. Again, flexibility and ambiguity are powerful strategies for commercial companies to insert their own meanings, catering for their business models.

Although the European Commission emphasized the need to address issues of data protection and mention the e-Privacy Directive, the organization did not

offer any education regarding other options of behavior online, such as anonymity and encryption. This is contrary to the A29WP document on privacy on the internet from 2000, which concludes that “It is necessary to provide anonymous access to Internet to users surfing or searching in the Net” (A29WP, 2000a: 53). The organization also makes the recommendation to “produce privacy-compliant browsers with the most privacy-friendly default settings [and] anonymous proxy servers [that] can hide the IP address and could be offered as a free standard feature with an Internet subscription by every ISP” (ibid: 86). Such options of ‘living’ in the online EU territory, which promoted privacy, anonymity, and encryption, were not mentioned in the awareness, education and industry-led initiatives offered. These education programs then, promoted a design for digital bodies which could not be listened to, in order to draw a clear boundary between the front and back end.

The Safer Internet Community Program (1351/2008/EC) was approved on December 16, 2008, and ran between 2009 and 2013. Unwanted content was no longer part of this action plan’s concerns and it was replaced by a new issue: harmful conduct, meaning practices such as grooming and cyber-bullying. These joined the two other issues that appeared from the start of the action plan: illegal and harmful content. This action plan was exclusively addressed towards children’s internet use and ways of protecting them. Another new addition to this program was the establishment of a knowledge database that provided the means for:

[M]aking measures to promote a safe and responsible use of the Internet, further developing supporting technologies, promoting best practices for codes of conduct embodying generally agreed standards of behavior and cooperating with industry on the agreed objectives of those codes. (1351/2008/EC)

Part of creating such a database involved collecting statistics and analyzing ‘trends’ happening in member states: “The knowledge base that can be used for designing efficient actions needs to be strengthened in order to better understand these changes” (EC, 2008: 2). Statistical analyses of societal behaviors were collected; however, as the document indicates the content of such data was ‘only’ shared with ‘stakeholders’ (EC, 2008: 8). This means that another sonic epistemological instrument to listen (statistically **measure**) to people’s behaviors online was developed, whereby the results and what was done with them was unknown to citizens and only shared with commercial actors. Although the safer internet programs were meant to be an educational program to help reduce spam, there was no information on what this actually meant.

Options of living on the EU internet have been gradually delegated to commercial companies under the European Commission's soft law approach since 1996, three years after the mass release of the first web browser. Framed as a 'safer internet', the European Commission's action plan was meant to ensure that use of the internet was safer for the market, including the old (copyright holders and the Commission itself) and new players (ISPs, telecoms operators, publishers, advertisers and, other tech companies). People were educated to behave within the prescribed routes that were paved for them by commercial actors, and yet such design was presented as a 'free choice' to exercise their autonomy and lives online. Importantly, by providing people with limited and controlled listening capacities to monitor illegal content, they were trained to become feedback loop filters that stabilized the EU market.

Conclusion: Brave New Web?

As you have listened throughout this chapter, a lot has happened since the previous chapter. Above all, there is just more of everything—more media companies involved, more technologies, more people, more money, and all these are entangled in many more communication channels which are mostly silent and hidden. In a way, this chapter gives you the short history of a lot of the fucked up situations we are experiencing today; from the Cambridge Analytica scandal, Brexit, online harassment and trolls, mis- and dis-information, 'fake news', content moderators, election frauds and more. This chapter showed the stages that enabled these business models and architectures to be naturalized as the *only* way to experience the web. This is how all these networked phenomena were made possible, mainly by promoting a specific business model for the web. And, as the character of the film *Anchorman*, Ron Burgundy, says—Boy, that escalated quickly.

As with the previous chapter I focused on two main areas that were the focus of media practitioners sonic epistemological strategies—territories and bodies. In the first half of the chapter I illustrated how the digital advertising industry created a new trade territory at the back-end of the web. I showed how the digital advertising industry and tech companies lobbied both the EU legislators and internet standards organizations to institutionalize and legitimize the automated data trade in the back-end. In the second half of the chapter I showed how a new data subject was produced by developing new sonic measuring devices which redraw the line of who and what is human. In addition, these data subjects had to go through educational training to maintain

the safety of commercial companies business models and at the same time to limit, narrow and control their understanding of how the web works and importantly—what they can do in/with it.

The chapter went to the nitty gritty details of how to produce territories and data subject. A lot of these details can be quite boring, long and jargon-laden (whether technical or legal), but this is precisely where the power relations are enacted. It is exactly these nuances that enabled the ad-tech industry to **restructure the online territory** by redrawing false divisions between private and public spaces and then decide what you but importantly *they* can do in each space. The biopolitical flexibility and ambiguity under the European Commission's soft-law approach enabled commercial companies to provide their own definitions according to their business models, then changing and adapting these along the way. These transitions of power gave a **license** to media practitioners to produce the EU trade territory. In this way, it was also possible for advertising associations and browsers to give **licenses** to *themselves* in the shape of self-regulation standards that they were authorised to draft, police and sanction.

A key moment in producing this online territory was creating web browsers default design which sent first and third party cookies to be plugged into people's bodies and communicate their behaviors to multiple actors—all without their knowledge or consent. Although cookies and the automated market that facilitated them through RTB created multiple communication channels and hence a burden on the infrastructure, the adtech industry standardized them to create a trade-friendly territory. The distinction between public and private spaces was paramount to legitimizing cookies as a sonic device that enabled EU citizens' digital bodies to be listened to. In doing so, they produced a *rhythmedia* that ordered legitimate communication while illegitimizing others. They created noise and presented it as harmonious sound.

While the scope of listening that ad-tech companies could deploy were expanded, people's listening abilities were controlled and narrowed. The lobbying of the advertising industry and the dominance of browsers also meant that, although the 1997 IETF cookie standard recommended people to be able to listen to what is happening in the 'back end' of their bodies, this suggestion did not materialize. People could only access and experience the web in a restricted and narrow way and communicate with their computers and other people without knowing what happened in other layers. The transition from subscription to free content and access by (behavioral) advertising turned people into the currency. But, as with other currencies, there was a need for a unified agreement about people's worth so they could be used, transferred, exchanged and monetized. In order to do that,

the advertising industry needed to standardize new processed listening capacities, which involved **measuring** tools and units.

The adtech industry's measurement standardization project of early 2000s aimed to make rules for the new automated online market. The larger goals were to commodify quantify, compare, transfer, monetize and bid data subjects and then trade them with other advertising companies in the accelerated rhythm territory through cookies. Measuring behaviors had to be accurate, especially in light of the amount of non-human actors such as bots, 'spiders' and routine actions that companies deployed on their services. Only the sound of human behavior counted. In this way, such filtration methods enacted and produced data subject according to assumptions of the normal human rhythm on the web. Any deviation from this was categorized as a bot.

Due to the fact accelerated bulk behaviors were considered to be bots, the adtech industry wanted to **train the digital bodies** of EU citizens to avoid behaving in ways that could confuse measuring. Therefore, they categorized fast, excessive-rhythm actions as spam. **Training digital bodies** was carried out through providing people with control mechanisms. In this way, EU citizens were trained to click 'consent' buttons without knowing what cookies were, how they worked, who were the entities that operated them, and, importantly, the consequences of this communication.

This control strategy was also conducted with another way to limit and manage people's options of living on the web, through education. The less people knew about the back-end and what they could do on the web the more power ad-tech companies had in standardizing these life settings. Discipline came in the shape of **training the body** and educating EU citizens as part of the Safer Internet Action Plans to protect commercial companies business models. As Monika Bulger and Patrick Davison from Data & Society argue, after the aftermath of Cambridge Analytica and the growth of misinformation and fake news—above all, people need to understand the environment they engage with. That means understanding what's the business model behind all these 'free' services:

Clearly, responsibility for accessing high-quality, reliable information does not rest solely with an individual, but with institutions, technology platforms, and nations, among other actors. Situating media literacy within this complex media and information environment can provide deeper insight into how education and training can be productively leveraged to improve responsible media engagement. (Bulger and Davison, 2018: 18)

These control mechanisms and education programs **trained people's bodies** to understand that they had power and choice by clicking that they 'agree' to a business model where they are the product without their knowledge. Importantly, they carried responsibility of the consequences of every action. The term 'control', here, refers to the control of people's behavior, not to giving them control. Another part of the training was to keep people's bodies 'safe' while actually teaching them how to keep commercial companies safe. Both the terms 'safe' and 'control', then, were used in the context of the EU online territory as a way to produce data subjects and, consequently, provide economic benefit and funding for the web. But as the EFF argues:

keep in mind that *none of this is your fault*. Privacy shouldn't be a matter of personal responsibility. It's not your job to obsess over the latest technologies that can secretly monitor you, and you shouldn't have to read through a quarter million words of privacy-policy legalese to understand how your phone shares data. Privacy should be a right, not a privilege for the well-educated and those flush with spare time. Everyone deserves to live in a world—online and offline—that respects their privacy (Cyphers, 2019).

Discouraging and making illegal bulk communication was also a way to individualize behaviors and **de-politicise** actions that could be carried out in groups. Similar to the personal experience and service that Bell's operators were encouraged to provide, here personalization as an experience is also the promoted way of living.

As the previous chapter showed, un-crowding parks that were public spaces meant for demonstration was achieved by redesigning their architecture and thus not allowing for collective civic action. This was also done with the telephone operators as Bell did not want them to be able to organise and unionise. When people are obliged to communicate in personalized spaces and not anonymously, it is easier to prevent possible demonstration and revolt through media. This was also why people were not taught how to encrypt and this option of communication was not supported or promoted. This is because technology companies and governments know that when we organize, unionize, act and protest together—we have more power.

To conclude, this chapter showed the development of more communication channels and the introduction of multiple media practitioners that deployed sonic epistemological strategies. Contrary to the previous chapter, in which Bell was the main media company, here there is a decentralization of several power nodes that

expanded their listening capacities. In the next chapter, there is a return to centralization of media power through Facebook—a company which creates a new power structure/balance through its listening capacities.

Notes

1. This metaphor has influenced the way people understand and communicate through this infrastructure of shared computer resources. The cloud metaphor is being criticised by digital rights advocates (usually with the slogan, ‘there is no cloud, just other people’s computers’) who warn of privacy hazards that are involved in such sharing of information between computers that are located in unknown places.
2. Green Papers in the EU ‘are documents published by the European Commission to stimulate discussion on given topics at European level’ (European Commission, n.d).
3. This approach is contrasted with ‘hard law’, “legally binding obligations that are precise (or can be made precise through adjudication or the issuance of detailed regulations)” (Abbott and Snidal, 2000: 421).
4. The Interactive Advertising Bureau is a global advertising industry trade association, which was founded in 1996. The association was formed by representatives from companies such as CNET, Microsoft, Time Inc., Juno, and Turner Interactive. Its main goal is to establish standards and practices for the advertising industry. For a good historic background on the IAB, see Gehl (2014: 98).
5. The EASA was founded in 1992 to support and promote the European advertising industry’s self-regulation.
6. The International Telecommunication Union (ITU) was founded in Paris in 1865 in its earlier configuration as the International Telegraph Union, and received its current name in 1934. The ITU deals with all ICT-related issues including television and broadcasting, the internet, and technological features such as 3D.
7. The Internet Society (ISoc) is an international non-profit organisation, founded in 1992 by Vint Cerf and Bob Kahn.
8. The Internet Corporation for Assigned Names and Numbers (ICANN) was founded in 1998 by Jon Postel and is a non-for-profit organization responsible for coordinating the Internet Assigned Numbers Authority (IANA) functions.
9. The World Wide Web Consortium (W3C) is an international organization, founded in October 1994 by Tim Berners-Lee. Its mission is to develop standards for the web with different stakeholders.
10. The Internet Engineering Task Force (IETF) was founded in 1986 and is responsible for drafting technical standards for the internet. These standards are not compulsory for adoption, so technology companies are encouraged but not forced to adopt them.
11. The Electronic Frontier Foundation (EFF) was founded in 1990 and “is the leading nonprofit organization defending civil liberties in the digital world” (<https://www.eff.org/about>).

12. By 'EU internet', I mean the way that people who are geographically located within the EU experience the internet territory. This means that people's experience of the internet is influenced by the Member State in which they live as well as EU legislation in relation to various issues such as copyright, privacy, broadcasting and more.
13. This is usually called the opt-out versus opt-in mechanisms. Opt-out means that people are automatically receiving a form of communication and then have the option to object by indicating they do not wish to receive it anymore, which is usually done by unsubscribing. Opt-in means that people are not automatically receiving a form of communication and they need to indicate whether they want to receive it or not beforehand. The former mechanism is usually more common in US legal discourses, whereas the latter is more common in EU legal discourses.
14. The first documented HTTP protocol was called HTTP V0.9, and produced in 1991 (<https://www.w3.org/Protocols/HTTP/AsImplemented.html>). The 1996 version mentioned above is the official version published in the IETF RFC 1945.
15. According to Smith, they are 'a graphics on a Web page or in an Email message that is designed to monitor who is reading the Web page or Email message. Web Bugs are often invisible because they are typically only 1-by-1 pixel in size. They are represented as HTML IMG tags' (1999).
16. As the A29WP argue: "As recital 26 of Directive 95/46 specifies, data are qualified as personal data as soon as a link can be established with the identity of the data subject (in this case, the user of the IP address) by the controller or any person using reasonable means. In the case of IP addresses the ISP is always able to make a link between the user identity and the IP addresses and so may be other parties, for instance by making use of available registers of allocated IP addresses or by using other existing technical means" (A29WP, 2002: 3).
17. Some of the arguments that the advertising industry presents is that with dynamic IP addresses (meaning that the address number changes from time to time) it is hard to deduce the profile of people. However, in 2010 the A29WP discarded such claims by observing that "behavioral advertising normally involves the collection of IP addresses and the processing of unique identifiers (through the cookie). The use of such devices with a unique identifier allows the tracking of users of a specific computer even when dynamic IP addresses are used. In other words, such devices enable data subjects to be 'singled out', even if their real names are not known" (A29WP, 2010: 9).
18. This protocol evolved into Transport Layer Security (TLS) during 1999 when the IETF published the first TLS standard (Dierks and Allen, 1999).
19. The exact phrasing was: 'Member States shall prohibit the use of electronic communications networks to store information or to gain access to information stored in the terminal equipment of a subscriber or user without the prior, explicit consent of the subscriber or user concerned. This shall not prevent any technical storage or access for the sole purpose of carrying out or facilitating the transmission of a communication over an electronic communications network' (Debusseré, 2005: 80).

20. PwC was given the name of the IAB's 'Measurement Task Force'.
21. Although, it took time for people to use computers individually, yet still profiles could be established.
22. These are usually programs that visit other websites to extract different types of information for different uses.
23. A user agent (browser) string is a way for the browser to identify itself.
24. For a good account of the standardization of advertisement sizes, see Gehl (2014: 95–103).
25. During the hearing of Mark Zuckerberg in the US Senate in relation to Facebook's involvement with Cambridge Analytica and the 2016 USA election meddling The CEO did not know how his company works (Sheffield, 2018).

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Engineering the (anti)social

Within a relatively short amount of time, from 2004 onwards, it has become difficult to imagine our lives without social media. Whether you are an avid user or only an occasional one, platforms, and specifically Facebook (mainly in the West) became inseparable of so many things we do every day: get reminders about birthdays, get invitations for events, text your friends, upload pictures, get updates about news and people (friends?) lives, chat in private groups, and if you're really lucky, get the occasional dick pic. If you are single or just looking for sexual encounters then in order to use dating apps like Tinder, Grindr, Bumble, and Feeld you will usually have to register with your Facebook account. Facebook has diffused into so many aspects of our lives that some people do not even consider themselves 'on' it when they use it. Although these platforms are free to use, there is a price to pay, we are just not made aware of it.

By now, I am sure that you want to throw away any book, article, or post that mentions Facebook. The company managed to go from the cool kid on the block to one of the most annoying and disputed ones. So why should you read another chapter about Facebook? The answer is that Facebook is just an example of bigger questions that we as media scholars and members of society need to ask. Examining Facebook opens up important questions about the kind of power media companies have. How do specific behaviors and people become categorized

as deviant? Why do they receive this categorization? Under which conditions are they made deviant? And, importantly, what is at stake?

As the previous chapter showed, soft-law approaches have been the governing model for the EU internet from the end of the 1980s. Even softer approaches have been adopted in the USA and other regimes. When this kind of transition of power from states to media companies is racing forward, we need to pause, listen to this soundtrack and ask—Is this the kind of society we want to live in? Do these companies have too much power? What other ways of using these technologies are possible? And, what can we demand from these companies? We need to reclaim our technological future.

Trying to tune into Facebook has been quite challenging for researchers. Facebook does not reveal the rationale behind its algorithms, ordering, and even its workers. Facebook does not give access to the way its various components function which has given it the label of a ‘walled-garden’ (Berners-Lee, 2010). Several scholars from media and communication, digital sociology, and software studies have examined Facebook using various tools. It has been a challenge because Facebook has multiple layers that consist of software, algorithms and code, but also human workers. In addition, these elements are constantly changing, and some workers are outsourced (such as content moderators) so they are not technically considered to be direct Facebook workers. The company also collaborates, purchases and affiliates with many other companies, which makes it difficult to understand how long it stretches its tentacles.

Because of such challenges, scholars have developed creative ways to examine platforms like Facebook. Carolyn Gerlitz and Anne Helmond (2013), for example, examine Facebook from a ‘medium-specific’ approach, inspired by Richard Rogers (2013). In this method, they ‘follow the medium’ and, as part of the Digital Methods Initiative (DMI), have developed a tool called Tracker Tracker, to try and track Facebook’s tracking techniques. But while the DMI methods make important contributions to the debates about platforms, they still provide only one aspect of it: the medium side. They do not account for the humans, both users and workers, who take part in the complex assemblage that is Facebook. Importantly, they do not question the medium’s tools, units and standards. They take many things for granted, especially in our case—what is spam. Such deviant behaviors are not counted or included in the analysis as equal components of value. However, as the chapters above have shown, media’s infrastructure, design, ways of use, measurements and units are all developed with specific values and intentions baked into them – Nothing is inherently deviant, it is (re)produced.

Tackling some of these obstacles, Beverly Skeggs and Simon Yuill (2016) developed several methods and tools to ‘get inside’ Facebook and challenge the platform’s self-description of being a ‘social-network’. Importantly, they used rhythmanalysis as a way of understanding the relations between different elements. Specifically, they use rhythms of life rather than networks as a way of explaining what Facebook ‘does.’ At the same time, they investigated whether Facebook makes people do things by untangling forms of engagement, whereby they asked people about their use of the platform. Although they argue that Facebook is an epistemological platform that is performative, they focus mainly on ‘liveness’, a term borrowed from Sarah Kember and Joanna Zylińska (2012). Therefore, they do not account for the way the divisions between rhythms of ‘life’ and ‘non-life’ have been rationalized, enacted, and negotiated.

This issue has been emphasized by Nicholas John and Asaf Nissenbaum (2019) who analyzed the APIs of 12 major social media platforms and found that they “do not enable individual users to obtain knowledge about negative actions on social media platforms” (John and Nissenbaum, 2019: 8). This new field of investigations into dis-connectivity (see also Karppi, 2018), points to these rhythmic irregularities and how particular rhythms are encouraged while others are suppressed. As *Media Distortions* emphasizes—all rhythms count, the processes that turn them into ‘liveness’ rhythms while **filtering** others is what I am interested in amplifying. In other words, all the deviant, spammy, silent, and unwanted rhythms—all are counted and have value.

So how do we approach Facebook, then? As Taina Bucher argues in regards to the non-useful use of the ‘black-box’ metaphor, instead of considering platforms as impossible to ‘see’—“ [a]sk instead what parts can and cannot be known and how, in each particular case, you may find ways to make the algorithm talk” (Bucher, 2018: 64). To understand how Facebook orchestrates people, objects and their relations through rhythmmedia, I used five methods. First, following Bucher’s (2018) technography method, I conducted an auto-ethnography on my newsfeed to examine how it orders my experience by checking how often the Top Stories and Most Recent preferences change. Second, I catalogued different term of use sections for one year, to examine what kinds of arguments Facebook makes, and how various definitions and explanations change over time. So yes, I am the 1% who has read their terms and conditions.

To get a sense of how Facebook works, there is a need to go to the ‘back-end’ of the software in other ways. Therefore, for the third method I developed a method I call *platform reverse engineering*, meaning that I read platform companies’ research articles. In this context, I refer to reverse-engineering of software, and

the attempt to analyze and identify its components and functions. As Chikofsky and Cross define reverse engineering, it is “the process of analysing a subject system to identify the system’s components and their interrelationships and create representations of the system in another form or at a higher level of abstraction” (1990: 15). By ‘reverse engineering’, I mean that I analyze these articles by searching for specific information that can reveal the way the platform develops its functions.

I focused on the rationale that guides the research; What are the company’s researchers trying to examine? Which tools and methods the company researchers use; and the way they conceptualize the platform and the people who use it. In this way, software and algorithms can be examined with details given by the companies that produce them. Facebook operates its own research center that employs in-house researchers to conduct research published in peer-reviewed journals, just like any academic research. This ‘archive’ (<https://research.facebook.com/publications/>) can also shed light on the motives, interests, and rationale that stand behind the company.

Fourth, I followed several pages that Facebook uses to announce news about its platform, mainly Facebook’s News Room, where it shares different statements about its current and new features. Finally, I analyzed specialist technology websites, which provided in-depth understanding about things that Facebook did not reveal. The websites I analyzed were *Wired*, *Slate*, *TechCrunch*, *Salon* and more.

Facebook was chosen as a case study as it is the most dominant social media platform (in terms of the number of users, engagement and revenues), and presents a new kind of digital territory that tries to colonise the whole web. If the previous chapter shows how multiple accelerated rhythm channels were introduced by third-party cookies, here, a different kind of **restructuring territory** is at play. This chapter illustrates how these channels are centralized back to a main node, which is Facebook. This chapter corresponds with the previous chapters, and shows similarities and differences in governing, managing, controlling and (re)producing people and territories by media practitioners with the use of seven strategies.

Social media platforms offer their services for free because they operate a multi-sided market where people’s behavior turns into the product (Zuboff, 2015), and is traded between multiple third-party companies, mainly advertisers. These media companies operate platforms which algorithmically sort, rank, classify, amplify and **filter** different types of information and relations. Because the business model relies almost exclusively on advertising, the way that people and things are ordered is designed to cater for them. This means that the more engagement

means more value, and more profit. This was confirmed by Facebook Chief Operating Officer Sheryl Sandberg, who along with other social media platforms representatives were called to Capitol Hill on September 4, 2018 to answer questions about propaganda and voter manipulation. Sandberg agreed to Senator Kamala Harris' question that "the more people that engage on the platform, the more potential there is for revenue generation for Facebook" (Glaser, 2018). But it is not only more engagement, but a very particular engagement.

This chapter shows the power relationships that Facebook establishes through its ability to listen to people in various spaces across the web, enables it to define, construct, and manage what constitutes as 'social' and 'sociality'. The chapter outlines Facebook's **filtering** machines, which include both human, non-human paid and non-paid actors trained in a feedback loop to behave in the appropriate way. In this way, Facebook determines what it means to be human and social on the web and beyond. It does so by listening and creating a dataset that includes all knowledge about people, and by rendering only what it considers to be 'social' as possible options of living in its territory and beyond. In this context, examining how deviant, 'noisy', and 'spammy' behaviors are constructed can tell us a great deal about what is considered to be the normal, or, in this case, how to engineer the social.

Filtering the Unwanted Using Four Mechanisms

Facebook offers (new) ways and spaces for communication between human and non-human, in the territory it produces. Facebook creates means for (self) expression, action, participation, channels of communication, and the architecture that enables, controls, or restricts them. It structures mechanisms and tools that enable people to present themselves and interact with others in its territories by pushing specific formats as expression. At the same time, the platform also limits, restricts, reduces, and **filters** people's options of actions and expressions, their way of living. This is similar to Bell's operators who had to express themselves through the 'voice with the smile', meaning in a positive way, in the same way as the 'Like' button. By doing so, the service is **training the (digital) body** towards behaviors framed as and reduced to 'positivity'. By stripping away contexts, nuances, and feelings from the way people can present or express themselves, Facebook **de-politicizes** its people through a biopolitical mechanism. Importantly, Facebook limits, constructs, shapes, manages, and commodifies the way humans and non-humans can behave within its territory and beyond.

Filtering is an important strategy for keeping Facebook’s multiple communication channels as productive and efficient as possible. Filtering in this context is conducted by human and non-human actors, paid and unpaid, who have different considerations and motivations, but who are all ordered in a particular rhythm. In order to operate as good filters, according to Facebook’s business model(s), all the elements involved, both human and non-human, need to go through training programs. Such **training of the body** is meant for all actors to internalize the correct ways of behaving in the platform’s territory, but it also turns them into educators of others who do not obey these standards.

The separation between signal and noise in this context is complicated as what constitutes a disturbance is decided by multiple actors, and is not restricted to those who create the medium. What needs to be filtered constantly changes because what is considered to be an interference to the business model is also constantly in flux. Thus, filtering is a continuous process that adjusts according to new and emerging trends, legal cases, economic shifts, elections, and also the business development of Facebook, its affiliates, its subscribers, and all non-human actors involved. This is shown in the diagram I made below.

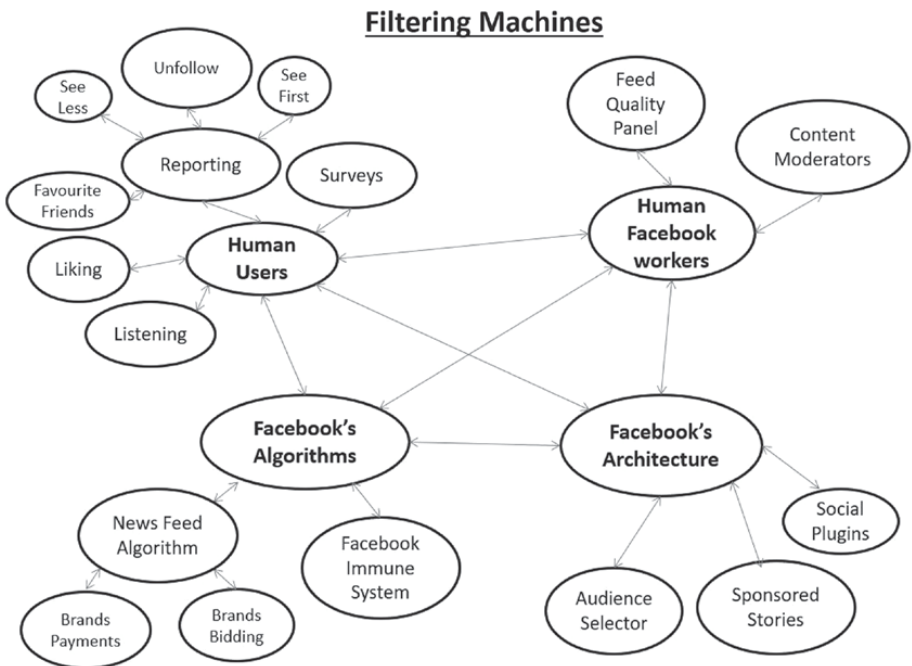


Figure 5.1: Facebook’s filtering mechanisms
 Source: Author

To **filter** unwanted content and behaviors and order its territory accordingly, Facebook (re)produces four main filtering mechanisms, which function in a recursive feedback loop (see Figure 5.1). The first two are Facebook's non-human elements: Facebook's architecture design, specifically the audience selector, sponsored stories, and social plugins; and Facebook's algorithms, specifically the newsfeed, and the Facebook Immune System. The other two filtering mechanisms are human elements. These include the free labor¹ of its (human) subscribers who perform as filtering machines in four ways: rating what is interesting by 'Liking' content (but not in an excessive way), reporting what is not interesting or is offensive/unwanted (which then enables users to 'unfollow/see less/see first/favourite' friends), filling out surveys, and listening to other users. The second group of human actors includes Facebook's human labor workforce, which consists of low-waged, outsourced labor that conducts content moderation, as well as in-house raters called the Feed Quality Panel. Each filter will be discussed below according to the order outlined above.

Modulating Architecture

As I have shown in the previous chapters, the architecture that media prescribe is not neutral. Facebook's architecture is also not neutral, natural or static, and it is influenced by its business model and operated by the **filtering** mechanisms, including Facebook's users, bidding for ads, newsfeed algorithms, and the platform's content moderators. This section shows how Facebook's powerful position is established through its ability to listen to people's behavior within *and*, outside its platform. This enables the company to produce knowledge, profiles and audience segments, that can then inform the design of specific features. By modifying its multiple communication channels and features, Facebook can shape, control and manage people's self-presentation, expression, actions and the tools they can use. In this way, Facebook (re)produces subjects that, through architectural **training of the body**, behave in a way that creates more value to Facebook; it conducts rhythmmedia.

According to Facebook's *Statement of Rights and Responsibilities*, although the platform "provide[s] rules for user conduct, we do not control or direct users' actions on Facebook" (Facebook, 2015). However, most of the research conducted by Facebook explicitly aims to influence people's behavior to increase the value of the service. Following the public outrage after the 'emotional contagion' research was exposed in July 2014, Facebook's Chief Technology Officer Mike Schroepfer

argued that, “[we] do this work to understand what we should build and how we should build it, with the goal of improving the products and services we make available each day” (Schroepfer, 2014). Building and changing the architecture, then, is done to ‘improve the products and services’, which are offered with payment to advertisers and companies. Therefore, engineering various elements in their platform should yield as much profit as possible from the free service it offers to its ‘normal’ subscribers.

Most of the research that Facebook conducts in the guise of academic research is intended to provide advice for platform designers on how to create architectures in a way that will influence people’s behavior to benefit company’s goals. As Facebook’s researchers argue, “Social networking sites (SNS) are only as good as the content their users share. Therefore, designers of SNS seek to improve the overall user experience by encouraging members to contribute more content” (Burke et al., 2009: 1). This ‘improvement’ comes in the shape of changing and influencing the architecture, the way people connect with their peers (Taylor et al., 2013) and their overall well-being (Burke et al., 2010; Burke and Develin, 2016). It also involves **filtering** problematic behaviors which can harm the platform, which can be conducted by its algorithms, its workers, and the people who use it (more on this in the following sections). The arguments from Facebook researchers show a clear intention to bring more value, mainly economic, to platforms. They advise on architecture changes to influence people’s behaviors and emotions towards more engagement, and preferably positive, to cater for the advertisers who sponsor it.

A paragon example of a design feature intended to influence people’s behavior on Facebook is the newsfeed. The newsfeed feature was launched on September 5, 2006, and provided a space where people can “get the latest headlines generated by the activity of your friends and social groups” (Sanghvi, 2006). However, it is also apparently a way to motivate newcomers’ contributions on the platform by ‘social learning’. With the newsfeed, people learn how others behave on the service (Burke et al., 2009). Social learning, as Facebook researchers argue, is about listening to other people’s behavior without distraction, and then performing the same behavior. To have a space where people can learn the correct way to behave, Facebook introduced the newsfeed, which:

[A]llows newcomers to view friends’ actions, recall them later, and may make links to the tools for content contribution more salient ... Social networking sites offer the opportunity to fine-tune the social learning metric, by taking into account friends’ actions and exactly which actions the newcomers were exposed to. (Burke et al., 2009: 2)

By introducing this key architecture feature, Facebook wanted to teach people how to behave on its platform according to its definition of sociality, learning by listening to peers behavior to create a desired rhythm. In many of Facebook's research findings, platform designers are advised to encourage people to engage more by contributing content and interacting with other people or brands, by either influencing the architecture or people's friends. Facebook researchers advise "nudging friends to contact another user" (Burke et al., 2011: 1), "engineer features which encourage sharing or make peer exposure a more reliable consequence of product adoption or use" (Taylor et al., 2013: 2), or "creating and optimising social capital flows on their services" (Burke et al., 2011: 9). Here, Facebook **reconstruct its territory** and nudges people and their peers for more engagement, and hence more value for the company.

Metrics influence people's behavior. For instance, on the science fiction television show *Black Mirror* episode 'Nosedive' we see a character lose her shit because her rating is not high enough. In the episode, people rate other people for their everyday behavior, metrics that put a number on everything you do, from the smallest interactions with your coffee barista and onto weddings. These ratings change how people behave, think, and feel. Although the episode is intended to be a satire on social media, it provides a poignant example into the power metrics can have on us, and it is not funny.

In 2014, two years before 'Nosedive' aired, the new media artist and scholar Benjamin Grosser (2014) was also intrigued by the power of metrics and wanted to understand what will happen if we remove them. Grosser developed the web extension, Facebook Demetricator (2012–present), which removes all metrics from Facebook's interface to examine how the lack of metrics influence people's experience. For his research, Grosser interviewed people after they had used the Demetricator and they said that their desire for more Likes, Shares, or interaction decreased. Such metrics, as Grosser argues, construct an economic-driven architecture that influences the way people feel and behave. Listening to other people's metrics creates a competitive environment in which people want more. According to Grosser:

Facebook metrics employ four primary strategies to affect an increase in user engagement: competition, emotional manipulation, reaction, and homogenization ... Through these strategies, metrics construct Facebook's users as homogenized records in a database, as deceptively similar individuals that engage in making numbers go higher, as users that are emotionally manipulated into certain behaviors, and, perhaps more importantly, as subjects that

develop reactive and compulsive behaviors in response to these conditions. In the process, these metrics start to *prescribe* certain kinds of social interactions. (Grosser, 2014)

This section looks precisely on the way Facebook’s architecture *prescribes* social interactions by focusing on some of these design features, specifically, audience selector, sponsored stories and social plugins. These features are not the full list of the service’s architecture; however, they provide examples whereby multiple practitioners conduct processed listening to people’s behavior in different spaces and times.

Who Listens to You?

The Audience Selector feature offers people who use Facebook the ability to control which people can listen to them. Facebook elaborates on this feature by saying that, “When you share something on your Timeline, use the audience selector to choose who it’s shared with. If you want to change who you shared something with after you post it, return to the audience selector and pick a new audience”. As Mark Zuckerberg argues in relation to such mechanisms, “Control was key” (Zuckerberg, 2011). He continues by arguing that this feature:

[M]ade it easy for people to feel comfortable sharing things about their real lives ... With each new tool, we’ve added new privacy controls to ensure that you continue to have complete control over who sees everything you share. Because of these tools and controls, most people share many more things today than they did a few years ago. (Zuckerberg, 2011)

Features are introduced to persuade people to share more and hence increase the value of the platform. As I showed in the previous chapter, promoting people’s control through browser settings was meant to make users feel as though they were empowered. Such ‘control’ narratives were meant to encourage them to contribute more personal information, opening their bodies to more (processed) listening tentacles of web-cookies. Here, similar strategies are at play whereby the Audience Selector feature is presented as a control and empowerment tool; redrawing an artificial line between private and public spaces. However, as with the cookie control mechanism, the responsibility of what happens with the information shared is passed to individual platform users. In this context, as well, while people provide information to different audiences, they still do not know how the company uses this data. So while they are offered more control over

which other individuals within their network see their content, the control they have over the back-end aspects of the interface is quite limited.

People cannot control if Facebook and other third-party companies listen to their behaviors, because they are not offered such an option. What people ‘share’, and the knowledge gathered about them is also unclear, since this can be a wide range of inputs, visible or not, given by people and their relations to others. Facebook’s meaning of ‘public’ is outlined in the *News Feed Privacy* section:

If you’re comfortable making something you share open to anyone, choose Public from the audience selector before you post. Something that is Public can be seen by people who are not your friends, people off of Facebook, and people who view content through different media (new and old alike) such as print, broadcast (television, etc.) and other sites on the Internet. When you comment on other people’s Public posts, your comment is Public as well.

However, this definition changed on November 13, 2014 into a much broader definition under the question ‘What information is public?’ In this newer version of what ‘public’ means, Facebook provides tools for people, but these have limitations when it comes to specific categories of information that will always be public. Moreover, the default setting of Facebook is always public, which means that to change this setting people must be aware of the consequences of what happens when information is public. If people do not feel comfortable with this, they must actively change the default settings, a task that, as will be shown below, is not necessarily respected by the service (also because the definitions of ‘public’ change with time). Importantly, as I have discussed above—people just do not change their default settings. Therefore, unlike the example Facebook gives in this definition, people do not need to ‘select’ public in the Audience Selector because this option is already selected for them.

The reasons behind providing the Audience Selector as a feature on Facebook’s architecture is not about empowering people to control the information they share, but rather the contrary: to encourage them to share more. Facebook’s research shows that while the company claims that the Audience Selector is a tool to empower people’s privacy, it is an architecture design solution to the problem of people who self-censor themselves:

Understanding the conditions under which censorship occurs presents an opportunity to gain further insight into both how users *use* social media and how to *improve* SNSs to better minimize use-cases where present solutions might

unknowingly promote value diminishing self-censorship. (Das and Kramer, 2013: 1, emphasis in original)

Here again, the rationale of Facebook is revealed through its researchers who highlight that ‘improving’ social media means more engagement and hence more value. Facebook’s researchers, Das and Kramer, give the example of an undesirable behavior of a college student who self-censored herself by not posting an event to a group because she feared it might be spammy to her friends who were not in that group. This means that there is an attempt to change people’s perceptions towards what they interpret as a spammy activity, and adapt it to what Facebook wants them to think about this activity—that it is not spam. The rationale behind this feature is to increase the value of the company by contributing as much information as possible (but not excessively as I will show below) and, by doing so, providing richer data that media practitioners can use to produce profiles to trade with. Other architecture design features are also meant to bring more value to Facebook; in the next section it is by using people’s friends as channels of advertising.

Channeling through Your Friends

One of the things that Foucault emphasises in relation to power is the ability to influence action of others, and Facebook’s Sponsored Stories is a great example of exactly that. As he argues, “Power relations are rooted in the system of social networks” (Foucault, 1982: 793). Sponsored Stories is a feature that was introduced on 2011. This feature shows advertisements on the newsfeed by using people’s peers’ identities, making it look as though they recommend a particular brand, but without their knowledge or consent. It is designed to look like a ‘normal’ post within the newsfeed (not on the right-hand side, which is a designated space for other advertisements), with people’s names and photos following their interaction with this brand (Like, Share, or Post). As Facebook describes in the *Advertising and Facebook Content* section, they “sometimes pairs ads with social context, meaning stories about social actions that you or your friends have taken”. People’s behaviors and interactions with other people, objects, pages, brands, and groups can be used to promote products and services without their knowledge or consent. In this way, people are not only the product but are also used as channels to promote other products, for free.

People are not allowed to monetize their own profiles on Facebook. As the platform makes clear in its ‘registration and account security’ section—‘You will not use your personal timeline primarily for your own commercial gain, and will

use a Facebook Page for such purposes'. Here Facebook demands people create a **license** to make profit from themselves in the shape of Pages. Facebook, on the other hand, can monetize people's actions, their friends, and their relations to other entities such as brands. As indicated under the section 'advertisements and other commercial content served or enhanced by Facebook', 2013 version:

You give us permission to use your name, profile picture, content, and information in connection with commercial, sponsored, or related content (such as a brand you like) served or enhanced by us. This means, for example, that you permit a business or other entity to pay us to display your name and/or profile picture with your content or information, without any compensation to you. If you have selected a specific audience for your content or information, we will respect your choice when we use it.

In this way, Facebook regulates the types of trade that can be conducted with the data its subscribers provide. Some people in the United States, as Eran Fisher argues, did not approve of this practice, and four months after the introduction of the feature, in April 2011, these people sued Facebook. According to Fisher, these people argued that, although the terms of use gave permission to the company to use their personal information for commercial purposes, they nevertheless joined the service before this feature was introduced. Therefore, they were not aware that such monetization would take place:

The argument made by the plaintiffs (and accepted by the court) is that by merely participating in the SNS, users create a measurable economic value ... The maintenance of an online persona (updating photos, publishing posts, commenting, Liking, or simply moving in real space with location services activated on a mobile device) is redefined by users as a form of labour, since maintaining this online presence creates economic value in social media. (Fisher, 2015: 1118)

As the court concluded, everyday life and especially, as Foucault argues, people's relations and links, have been the main target of Facebook to influence, shape, manage, and control. Facebook yields an economic value from such relations, which are rendered into measurable quantified and tradable commodities. This value is produced in three ways in the case of Sponsored Stories: first, by people's engagement with brands, services or events; second, people's friends' networks as potential audiences for advertisers with well-defined profiles for customization; and third, transforming people into commercial channels, connecting between the advertisers and people's friends, while exploiting their relations and behaviors

across the service without their knowledge. Since people's personas, preferences and connections are monetizable, it is paramount that they are as up-to-date as possible. Therefore, part of Facebook's terms of use is to oblige its members to endlessly modify, change, and polish their profiles.

Beyond the information people provide by performing their everyday life on Facebook, such as liking, sharing, commenting and listening (discussed more below), they are encouraged to provide as many identifying details on themselves, such as their location (their home and places they visit), work, and education, phone number, family members, and relationship status and so on. In addition, people are also encouraged to share their feelings and their preferences such as favorite books, films, TV show, music, etc. As Facebook says in its 'Advertising and Facebook content' section:

So we can show you content that you may find interesting, we may use all of the information we receive about you to serve ads that are more relevant to you. For example, this includes: information you provide at registration or add to your account or timeline, things you share and do on Facebook, such as what you like, and your interactions with advertisements, partners, or apps, keywords from your stories, and things we infer from your use of Facebook.

Facebook listens to people's lives (both actions and 'non-actions' which are silent) but also 'infers' people's profile by analysing previous behaviors it archives and makes predictions. The more knowledge and accurate details people provide, the better Facebook and advertisers can target them or their friends in the future. Facebook argues that this is to serve relevant ads, selling personalization as the preferred way to experience their platform. To push people to provide more details, Facebook added a feature to ask friends to give more details. If Facebook users are not willing to behave in the desired way then their social networks can be mobilized to help them do so.

Facebook's researchers have conducted experiments to understand how different visual displays of Sponsored Stories, which they call 'social advertising', influence the way people respond to these ads. In this way, Facebook wants to examine what architecture design is needed to yield the best interactions with ads. According to Facebook's researchers:

Sponsored story ad units resemble organic stories that appear in the News Feed when a peer likes a page. Similar to conventional WOM approaches, the story does not include an advertiser-generated message, and must be associated with at least one peer. The main treatment unit is therefore the number of peers shown.

Since the ad units are essentially sponsored versions of organic News Feed stories, they follow the same visual constraints imposed by the News Feed: they must feature at least one affiliated peer, and a small version of the first peer's profile photo is displayed in the leftmost part of the unit. (Bakshy et al., 2012: 7)

This description shows how design features are used to blur the difference between what Facebook calls 'organic' (more on the politics behind 'organic' below) and Sponsored Story in two ways: by the appearance of a story and by positioning the sponsored story on the newsfeed. This is a spatial design very similar to newspapers, as the platform usually designates ad spaces on the right-hand side, which creates a separation between ads and the newsfeed. In this way, Facebook reorders the spaces that people have become accustomed to, to influence them with advertisements. Interestingly, on November 14, 2014, Facebook's newsfeed announcement argued that, from survey the company conducted it was discovered that people want "to see more stories from friends and Pages they care about, and less promotional content" (Facebook, 2014). Sponsored Stories, which continue to exist in various forms until this day, are not stories from Pages that people Like, but rather are stories paid for by advertisers that their peers Like. In this way, you have to listen to stories you are not necessarily interested in.

'Social advertising', which monetizes interactions that people's peers have with brands and products, uses *social cues* and is very similar to word-of-mouth-marketing. For Facebook's researchers, 'a positive consumer response' means that people have clicked on the ad or liked the product/organization. The researchers also examined the way the strength of the relationship between friends can influence people into higher engagement with ads. To do this, they measured the frequency of communications between people, which included commenting on or liking posts, but also sending private messages, within a period of 90 days. As will be elaborated in the ad auction section—time, the frequency of actions, and the repetitiveness of behaviors are a key measurement for Facebook's business model. It enables the platform to monetize on people's repetitive actions, and hence preferred actions, relations and things: to orchestrate their rhythms toward more value.

As Facebook researchers argue, "social networks encode unobserved consumer characteristics, which allow advertisers to target likely adopters; and the inclusion of social cues creates *a new channel* for social influence" (Bakshy et al., 2012: 2, my emphasis). 'Encoding' here means conducting processed listening to create a database which can then be used to reorder things, people and their relations in ways that yield more profit. Social cues are the way Facebook conducts

rhythmmedia; they are architecture designs which produce people into *communication channels* to influence their peers. These experiments show is that people's behavior is measured, categorized and archived to then be mobilized toward influencing their friends' behavior. Following Foucault, here, power is enacted over people's actions and, in particular, their relations with their peers through special architecture design. This is achieved by both Facebook and advertisers, who can listen to people's characteristics, behavior and the strength of their ties to produce advertisements and also to turn users into communication channels that can be mobilized for advertising.

Amplified Listening Capacities

The last principle on (the already deleted) Facebook's Principles section, was advocating for 'One World', meaning that Facebook's service 'should transcend geographic and national boundaries and be available to everyone in the world'. This principle is key to Facebook's mission to render the world into its own media standards, including currency, legitimate/appropriate behavior, trade practices, and products. This practice is enabled through Facebook Connect, which was launched on December 4, 2008, and was the next step after social buttons were introduced in 2006. Facebook Connect turned the company into the digital territory's central node through which data is communicated to and from the rest of the web, laying the groundwork for the social plugins integration with the rest of the web in 2010.

During Facebook's third conference, *f8*, in April 2010, Facebook launched its Open Graph service and provided an Application Programming Interface (API). This meant that it literally and technically opened the platform and enabled third parties and their developers to receive data from Facebook. At the same time, these third parties fed their data back to Facebook, integrating into its Open Graph, and embedding it deeper within the web's architecture. As Facebook argues, the Open Graph started with the Social Graph, which was:

[T]he idea that if you mapped out all the connections between people and the things they care about, it would form a graph that connects everyone together. Facebook has focused mostly on mapping out the part of the graph around people and their relationships. (Hicks, 2010)

With the Social Graph, the vertices of connection were between 'friends' who served as nodes within the network. With with the Open Graph, however, these links went beyond friends and include various types of objects and activities

conducted within Facebook's territory and spanning out onto the rest of the web. This was done to stretch Facebook's knowledge database beyond a confined space (of its platform), as in a disciplinary mode of governmentality, and onto wider spaces (the rest of the internet), as with biopolitics. Listening was stretched across multiple spaces both within *and* outside Facebook to produce richer profiles, and importantly—produce a new territory.

The Open Graph includes Facebook's subscribers' data, consisting of information they share and their behaviors, which are rendered and **filtered** according to Facebook's architecture, tools, design and currency. As Taina Bucher explains:

Open Graph is modelled on RDF, a W3C recommended standard for marking up a webpage in order to be able to encode data in a universally recognisable way ... This mark-up code turns external websites and digital objects into Facebook graph objects, understood as entities made legible by the Facebook platform. (Bucher, 2012b)

In this way, Facebook translates other websites, objects, and actions into its own standards, while people's activities on these places are fed back to it. As Mark Zuckerberg argued, in 2010, when he introduced the Open Graph feature:

[W]e are making it so all websites can work together to build a more comprehensive map of connections and create better, more social experiences for everyone. We have redesigned Facebook Platform to offer a simple set of tools that sites around the web can use to personalize experiences and build out the graph of connections people are making. (Zuckerberg, 2010)

For Zuckerberg, being 'social' means that ordering of people and objects are **filtered** through Facebook's territory, **measuring** units and understanding of value—all according to his desired rhythmmedia. Facebook orders people's tempo-spatial experiences to create 'personalization' according to their profiles. The way to produce profiles and create a dynamic database was conducted with social plugins. When websites, platforms, and apps install social plugins, they establish two-way communication channels between their territory and Facebook. So instead of websites linking to each other in a decentralized manner as is the case with hyperlinks, there is a double process of decentralizing and recentralizing from and to Facebook. As Zuckerberg argues above, 'social' means personalized experiences, and these are produced by conducting processed listening to multiple spaces across the web and then reordering their experiences in a personalized manner with rhythmmedia on Facebook.

In order to tailor the architecture to the person, the platform needs to know them well enough to be able to produce spaces and times that fit their profile, but, importantly, one which nudges them towards more engagement. Facebook's Open Graph creates a particular type of 'social' compared to the previous (relatively) decentralized web as social graph has made it so all roads go from and come back to Facebook, centralizing the platform as the central node. The social plugins that Facebook launched when it began were the Like Button, the Activity Feed, Recommendations, the Like Box, the Login Button, Facepile, Comments, and the Live Stream. Facebook describes social plugins in the *Other Websites and Applications* sub-section under the Data Use Policy section:

Social plugins are buttons, boxes, and stories (such as the Like button) that other websites can use to present Facebook content to you and create more social and personal experiences for you. While you view these buttons, boxes, and stories on other sites, the content comes directly from Facebook. Sometimes plugins act just like applications. You can spot one of these plugins because it will ask you for permission to access your information or to publish information back to Facebook.

As this definition illustrates, there is no need to click on any button in order for the social plugin to communicate your behavior through multiple channels, as this is initiated by just loading a webpage. In 2010, Facebook announced that the Like button would cross territorial boundaries and take over the web by transforming the way people connect with websites, publishers and platforms outside Facebook. To emphasize the value of the Like button, Facebook provided data on the people who use it and argued that they are more engaged, have more friends, and are more active. Facebook argued that:

By showing friends' faces and placing the button near engaging content (but avoiding visual clutter with plenty of white space), clickthrough rates improve by 3–5x ... Many publishers are reporting increases in traffic since adding social plugins ... people on their sites are more engaged and stay longer when their real identity and real friends are driving the experience through social plugins. (Facebook, 2010)

Different websites across the web were encouraged to embed social plugins to their architecture to gain more traffic and insights on people's real identities. However, persuading publishers and websites that they should integrate social plugins took time. This is similar to Bell persuading department stores that using the telephone

for purchasing will be better for them. At the same time, this practice helped to promote Bell through the *co-operative advertising* of showing telephone numbers in newspapers. By pushing websites to integrate social plugins Facebook aimed to standardize and commodify people's interactions with objects and other people, their self-expression, and make the rest of the web use its market currency.

As I show in the previous chapter, while the advertising industry wanted to standardize listening tools and units that all digital advertisers, publishers and other companies should use, Facebook aimed to be the exclusive standard. This means that the web is **filtered** through Facebook's social plugins in a recursive feedback loop that goes back and forth and adjusts itself according to the four mechanisms discussed in this chapter.

Social plugins and Facebook's API render people's digital lives, conducted outside Facebook's territory, into its units and integrating them back into its platform while gaining more knowledge about people's actions across various spaces. This creates more value for Facebook. This kind of social engineering has become a primary tool for the biopolitical management of Facebook's users, because by reproducing and **filter** human (and non-human) interactions, the company wants to make more value. For example, in its *Information we received and how it is used* sub-section under the Data Use Policy section, Facebook indicates that:

We receive data whenever you visit a game, application, or website that uses Facebook Platform or visit a site with a Facebook feature (such as a social plugin), sometimes through cookies. This may include the date and time you visit the site; the web address, or URL, you're on; technical information about the IP address, browser and the operating system you use; and, if you are logged in to Facebook, your User ID. Sometimes we get data from our affiliates or our advertising partners, customers and other third parties that helps us (or them) deliver ads, understand online activity, and generally make Facebook better. For example, an advertiser may tell us information about you (like how you responded to an ad on Facebook or on another site) in order to measure the effectiveness of—and improve the quality of—ads.

The time (date and specific time), physical location, type of browser, operating system and device you use all matter to Facebook for their database, as they did for other advertisers, discussed in the previous chapter. Here, Facebook has delegated some listening capacities to advertisers who, in turn, help the service to improve ordering ads by knowing more about its subscribers. This is done through every website, game and application, as well as Facebook's affiliates and advertising partners that have integrated the social plugins. Data are communicated

into Facebook and **filtered** through its currencies and ‘correct’ behaviors, which receive a classification that is then scanned by the Facebook Immune System algorithm (more on this below).

According to Anne Helmond (2015), social plugins function as API’s call for specific requests from Facebook’s service. According to her, to open a channel of communication with Facebook, websites need to embed a Javascript code, the Facebook Software Development Kit (SDK), which translates their requests into the platform’s language, making them ‘platform ready’, as Helmond describes it. In this context, Carolyn Gerlitz and Anne Helmond (2013) argue that Facebook attempts to make the web more ‘social’ through the exchange and circulation of its social plugins, specifically the Like button, in what they term the ‘Like economy’. “While the Open Graph presents an attempt to decentralise opportunities to connect external web content to Facebook, it at the same time recentralizes these connections and the processing of user data” (Gerlitz and Helmond, 2013: 1355). The Like button, suggest Gerlitz and Helmond, becomes an exchange currency that is supposed to reflect people’s social behavior, approach, and emotions towards a form of content. Another way of thinking about this evolution is as a development of cookies, web-bugs and, particularly, advertising networks.

Every Breath You Take I’ll Be Listening to You

As the previous chapter showed, one of the main web economies has been facilitated by cookies, whereby publishers and advertising networks opened a whole trading network in the back-end which was silent to ‘ordinary people’. It is a network of accelerated rhythm communication channels which are plugged into people’s bodies and create profiles based on their behaviors over time and all the time. In the previous chapter, publishers and website owners usually listened to people through cookies sent from their sites (first-party cookies) or from a group of sites facilitated by an advertising network (third-party cookies), which was still relatively decentralized. With Facebook there is a re-centralization of listening powers back to platform, which listens to people’s behavior across the web, wherever there are social plugins.

Web economies that the digital advertising industry developed in the late 1990s flourished from **measuring** technologies and units such as cookies, web-bug/pixels, clicks, impressions and hyperlinks, have merged together in Facebook’s territory and beyond. This is discussed in the Interactive Advertising Bureau (IAB)’s document ‘Social Media Ad Metrics Definitions’ (2009), in which they want to standardize the social media metric, as they argue they want to:

[S]timulate growth by making the reporting of metrics for agencies and advertisers across multiple media partners more consistent. The IAB hopes that all players in the Social Media space will coalesce around these metrics to encourage growth through consistency. (IAB, 2009: 3)

In the document, all the previously used metrics appear again: unique visitors, page views, (return) visits, interaction rate, time spent, and video install (posting a link). The **measurement** of many other actions can now be listened to, however, through social plugins that the IAB calls ‘relevant actions taken’, which include: games played, videos viewed, uploads (e.g. images, videos), messages sent (e.g. bulletins, updates, emails, alerts), invites sent, newsfeed items posted, comments posted, friends reached, topics created, and number of shares (IAB, 2009: 8). Therefore, it is not only the ‘Like economy’, as Helmond and Gerlitz suggest (2013), but a mix of clicks and links, but, most importantly, cookies combined with pixels (which are basically ‘web-bugs’, as discussed in the previous chapter) that allow multiple communication channels to function simultaneously in the ‘back-end’. These mechanisms allow Facebook to listen to people’s behavior across the entire web. These channels are all linked to Facebook which produce both the architecture and the subjects, and, therefore, make its territory a central node that **filters** data through its territory.

While these websites and advertising companies produce people’s profiles by assigning what they consider to be anonymous IDs, Facebook already has profiles of users by forcing them to use their real names. In doing so, Facebook has further developed cookies and provided a face and a name to the ID numbers that cookies provided in the past. At the same time, this technology development has helped Facebook to promote its service and standardize its own measuring unit, the Like. As Robert Gehl argues:

Facebook Connect is the ultimate expression of the standards-setting project of the IAB; after spending years building up a user base via network effects, Facebook’s IAB-inspired standardised datasets were opened up to marketers across the Web. Thus, social media templates have developed in large part as a result of the standardization of advertising practices established by the IAB. (Gehl, 2014: 108)

Facebook’s social plugins were a development inspired by the advertising industry, and specifically advertising networks structure. The main architecture characteristic that Facebook developed was its position as the central node that orchestrates

the rhythms of multi-layered communication channels. These channels simultaneously listen and produce subjects, which can later be targeted in ‘custom audiences’. Therefore, social plugins allow an enhancement of Facebook’s listening capabilities by knowing people’s behavior inside *and* outside Facebook’s territory. With social plugins, Facebook can draw the Open Graph map of the web with richer profiles because it can listen to people’s behavior anywhere on the web and across devices.

At the same time, Facebook also **filters** the way people’s behavior will be categorized in the normality curve it structures. Instead of being an axis for advertising channels of communication, Facebook has changed what an ad network means by transforming the central node into a whole platform. This new, ever-mutating and expanding territory enables people to carry out their everyday lives; but they are constantly **filtered** through Facebook’s changing definitions of what it means to be ‘social’ and human by deciding what has more value and hence more profit. Importantly, Facebook simultaneously conducts multiple communication channels, which cater for different elements that are involved with this rhythmia feedback loop, including: users, publishers, advertisers, advertising networks, and affiliates.

Facebook provides these third-party companies limited and controlled listening capacities, allowing them to produce data subjects. As the IAB’s metric standardization guide for social networks indicates, with Facebook Connect, “Web publishers are now able to build an even richer site experience by incorporating social features. These features include accessing user and friend data to customize the user’s experience and publishing user activity back to newsfeeds on social networks” (IAB, 2009: 7). However, advertising companies and publishers are restricted by Facebook in the kinds of listening they can deploy. In doing so, Facebook tries to shift the power relation and become a sort of advertising association that provides **licenses** to advertisers; deciding how much listening capacities they will have but at the same time making their own standards for **measurement** of people.

The section Facebook Ad Tracking Policy, which appeared under the umbrella of the Facebook Ads section, was removed in December 2014. It outlined the kinds of listening advertisers can and cannot conduct. Facebook also restricts advertisers that bid on subjects’ data with techniques such as ‘Impression Tracking Data’, ‘Third Party Ad Tracker’, and ‘Click Tracking Data’. All of these are measuring units discussed in the previous chapter that were developed by advertising associations. With such terms, Facebook establishes that, now, all of these must be authorized, **licensed** and **filtered** through its own units and communication channels. As the policy shows, such companies were obliged to be certified with

Facebook by 2011, presumably in order not to make profit on its subscribers data behind Facebook's back (Figure 5.2).

Desktop Help Facebook Ads Ads Policy and Guidelines English (US)

Advertising Guidelines: Examples & Explanations

Using Data & Privacy

Ad Copy, Image, Targeting & Destination

Guidelines for Advertised Products & Services

Use of the Facebook Brand

Intellectual Property

Advertising Community Standards

Facebook Ad Tracking Policy

Promotions & Sweepstakes

User Feedback

Back

Facebook Ad Tracking Policy

We're committed to protecting people and their data. To limit the types of data that can be learned about people from ad tracking technologies, while at the same time allowing our advertisers to get the campaign information they need, we've adopted the below additions to our policies governing advertisements on Facebook:

- Data collected as a result of the display of an advertisement to a person ("Impression Tracking Data") is allowed only on limited advertising products, as designated by Facebook. Impression Tracking Data may not be collected on any bidded advertising products.
- Any vendor collecting Impression Tracking Data ("Third Party Ad Tracker") must be certified by Facebook. Any Third Party Ad Tracker who is not certified by Facebook by January 1, 2011 will not be allowed to implement any technology that collects Impression Tracking Data, including tracking pixels or tags.
- Data collected as a result of a person clicking on an advertisement ("Click Tracking Data") is allowed on most advertising products. Click Tracking Data may only be collected through the use of a unique tracking URL off of Facebook. Click Tracking Data does not include data related to a person taking inline actions, such as clicking the Like button, RSVP'ing to an Event, or responding to a Poll.

Was the content on this page helpful to you? Yes · No

Permalink · Share

Figure 5.2: Facebook Ad Tracking Policy, (last time) captured on 2 November 2014

Only Facebook's **measuring** tools and units are authorized to produce data subjects; while all other players, from publishers, advertisers, apps, games, etc., need to adopt and listen to these data subjects in the same standardized and yet limited manner. As illustrated in Facebook's Advertising Guidelines:

In no event may you use Facebook advertising data, including the targeting criteria for a Facebook ad, to build or augment user profiles, including profiles associated with any mobile device identifier or other unique identifier that identifies any particular user, browser, computer or device.

In this way, Facebook aims to produce data subjects and the meaning of sociality as a standard that everyone else needs to adjust to, but only the company has access to the full dataset. While other advertisers were restricted by Facebook to produce subjects, the company does not restrict itself to creating profiles from a wide range of sources, even those who are not subscribed to the platform. In October 2011, Byron Acohido, a journalist for *USA Today*, revealed that users are being listened to across the web even if they logged out *and* even if they have not subscribed to Facebook. According to van Dijck, Acohido

[F]ound out that Facebook tracks loyal users as well as logged-off users and non-members by inserting cookies in your browser. These cookies record the

time and date you visit a website with a Like button or a Facebook plug-in, in addition to IP addresses ... When confronted with these findings, Facebook claimed it was using these tactics for security reasons, but, obviously, tracking these kinds of correlations could also become a tempting business model. (van Dijck, 2013: 53)

This business model has already been used by the advertising industry for more than a decade, and Facebook has developed it further. In fact, Facebook has repeatedly argued that creating profiles for non-members is a bug. A good example of this is Facebook's announcement on June 21, 2013 of the bug fix that jeopardized six million users, but on the way exposed the fact that the platform was building 'shadow profiles' through listening to people's contact lists or address books on their phones and uploading them to Facebook (Facebook, 2013). According to tech journalist Violet Blue, "Facebook was accidentally combining user's shadow profiles with their Facebook profiles and spitting the merged information out in one big clump to people they 'had some connection to' who downloaded an archive of their account with Facebook's Download Your Information (DYI) tool" (Blue, 2013). But as we know with most of Facebook bugs: it's not a bug, it is a feature.

This 'bug' was revealed to be part of Facebook's business strategy on May 26, 2016, whereby Facebook argued that it wants to bring 'better' ads by "expanding Audience Network so publishers and developers can show better ads to everyone—including those who don't use or aren't connected to Facebook" (Bosworth, 2016). Whether or not 'everyone' wanted better ads was beside the point, apparently. On the same day, Facebook also changed its ad privacy control, which changed people's preferences to opt in even if they clearly indicate they want to opt out. In this way, Facebook changes people's options of living online to fit to its own version of sociality.

According to Arnold Roosendaal (2011), Facebook sends a unique user ID cookie when a person first creates an account. As Facebook indicates in its *Data Use Policy*, a User ID is "a string of numbers that does not personally identify you, while a username generally is some variation of your name. Your User ID helps applications personalize your experience by connecting your account on that application with your Facebook account. It can also personalize your experience by accessing your basic info, which includes your public profile and friend list". According to Roosendaal, when users attempt to login to the service from a different device, Facebook sends a temporary (session) cookie, which after you log in is then replaced with the same unique user ID, allowing the service to link the same

person across different devices. In this way, Roosendaal argues, Facebook knows who a user is even before they fill in the details of their username and password. This is a similar technique to ad networks' practice of cookie-synching, whereby the network can identify users by synching their cookies communication from multiple websites. The user ID, then, is the data subject that Facebook produces, but since the company has people's names they can match the 'anonymous' numbers to people's identity.

Therefore, people's behavior across the web, apps *and* devices, specifically where social plugins and pixels are installed, is being listened to by Facebook and connected to their Facebook profiles, which include their real names. In doing so, Facebook wants to make sure it listens to the same body because it needs accurate production of data subjects that can then be monetized, either by selling them or influencing their peers. According to Roosendaal, Facebook also sends cookies to non-members, which creates 'shadow profiles'; so that if and when this person creates a Facebook account, the history of their behavior that has been archived thus far will be synched to their unique user ID cookie and a Facebook profile. The data subject is in a constant process of production, with Facebook's memory.

With social plugins, Facebook has expanded the listening process even further to capture all the temporalities of people's actions within and outside its territory. In the next section, I focus on another non-human filter—algorithms. I illustrate the way Facebook uses algorithms to reorder people's spatial and temporal configuration; to influence their behaviors by encouraging specific ones it prefers (sociality) and filtering and removing ones that can harm the business model of the service (spam). In short, how Facebook conducts rhythmedia.

Ordering Algorithms

Facebook operates several algorithms that have different purposes. According to Tarleton Gillespie (2014), algorithms are procedures that use input data and process them into desired output by using specific calculations that instruct the steps to be taken. Because algorithms rely on input data, meaning people's behavior, the bigger the database the more relevant they can operate (whatever relevance may mean to the company that deploys them). Therefore, Facebook's social plugins are a way for the company to listen to people's behaviors beyond its platform and produce a richer database/archive that its algorithms can use. As Gillespie (2014) argues, algorithms "not only help us find information, they provide a means to know what there is to know and how to know it, to participate in social and

political discourse, and to familiarize ourselves with the publics in which we participate. They are now a key logic governing the flows of information on which we depend” (2014: 167). In this sense, algorithms are one of the tools media practitioners use to conduct rhythmmedia, a way to reorder and shape people’s temporal and spatial boundaries. Algorithms want to know us to order us.

However, as Taina Bucher argues, algorithms “do not merely *have* power and politics; they are fundamentally productive of new ways of ordering the world. Importantly, algorithms do not work on their own but need to be understood as part of a much wider network of relations and practices” (Bucher, 2018: 20). These networks that Bucher points at are precisely the four filtering mechanisms I outlined above. It is important to remember that each of the filtering mechanism I describe are interrelated, entangled, and feed one another; they do not operate by themselves. Interestingly, though, Bucher examines mostly people and journalists’ engagements with Facebook’s algorithms with hardly any consideration of the way such orderings are influenced by Facebook’s main source of income—advertisers. It is precisely this ordering that I focus on now. The two algorithms that will be discussed in this section are the newsfeed algorithm, usually termed EdgeRank and the Facebook Immune System (FIS). As with any platform, these algorithms may not exist by the time this book is out, they may have been tweaked, changed and divided to other algorithms. The main point here is not their names but rather what they do, what is the rationale behind them.

Money, Sorted

Facebook’s newsfeed algorithm is meant to organize and present things according to a specific tempo-spatial order that is calculated by various factors. Facebook argues that EdgeRank’s calculations operate according to three main parameters: affinity, weight, and time decay. Mimicking the advertising network DoubleClick’s motto mentioned above, Facebook argue that its newsfeed’s goal “is to deliver the right content to the right people at the right time so they don’t miss the stories that are important to them” (Backstrom, 2013). Because people do not have enough time to go over all of the stories, Facebook wants to optimize their experience and reorder their time right. But what is ‘right’ for Facebook is not necessarily what is right for people. As Facebook says, its “ranking isn’t perfect, but in our tests, when we stop ranking and instead show posts in chronological order, the number of stories people read and the likes and comments they make decrease” (Backstrom, 2013). Ranking, then, leads to more engagement,

and this is what Facebook sells as the right thing for you. Since engagement is important for the ongoing production of data subjects, any sign of a decrease in such actions is something the company would like to avoid. Therefore, the timing of content and interactions on Facebook is not presented in chronological order.

Since timing is so crucial to producing data subjects and sociality, Facebook's newsfeed algorithm produces a certain temporality that engineers all these elements in the 'right' way. During the year-long auto-ethnography experiment I conducted on Facebook's desktop website from November 2013 until November 2014, Facebook changed my newsfeed preferences 71 times against my wishes from *Most Recent* to *Top Stories*. These changes occurred mostly when I did not visit Facebook frequently, and sometimes it changed my preference several times on the same day if I visited the platform many times during that day. The platform listened to my daily rhythms and consequently changed and adapted the architecture accordingly. I received an experience that I actively chose not to have.

The design of the newsfeed sorting is confusing because the user needs to press the 'sort' button and discover the two options to make the choice. More effort and steps had to be taken to change to *Most Recent* because the default setting is always *Top Stories*. When *Most Recent* is chosen then the newsfeed has a sentence written at the top that tries to persuade the user to come back to the desired feature: 'Viewing most recent—Back to top stories'. So despite arguing in its post about newsfeed that the way it shows content is by 'letting people decide who and what to connect with' (Backstrom, 2013), Facebook constantly ignored my explicit wishes and changed the sorting back to the default. My default settings were chosen for me.

This matter was disclosed in the *Controlling what you see in Newsfeed* section in a small note at the bottom of the section, saying—"Your News Feed will eventually return to the Top Stories view". However, this statement only started to appear on July 27, 2014. In this way, people are repetitively nudged through default design to learn how to behave in Facebook's 'right' way. What Facebook does here is orchestrate people's territory by re-ordering things in a way that the company thinks might yield more engagement. "An algorithm", as Bucher argues, "essentially indicates *what* should happen *when*, a principle that programmers call 'flow of control', which is implemented in source code or pseudocode" (Bucher, 2018: 22, emphasis in original). It is precisely the *when* that Facebook aims to orchestrate, but instead of calling it in the passive concept of 'flow' I use *rhythmedia* which like Williams argues, brings back the intention. In other words, Facebook conducts *rhythmedia* in a way that intends to influence people's behavior into more engagement and hence more knowledge production.

Another way to encourage people to engage more by reordering time on the platform is conducted by resurfacing older posts on the newsfeed. This change to the newsfeed algorithm was announced on August 6, 2013, when Facebook argued that its “data suggests that this update does a better job of showing people the stories they want to see, even if they missed them the first time” (Backstrom, 2013). According to Backstrom, tests showed that there was an increase of 5% in Likes, Comments, and Shares for ‘organic’ stories and an 8% increase in Page engagement. More engagement on its platform produces more value, so Facebook provides instructions to its algorithm accordingly—emotions such as nostalgia can be manipulated to bring more profit. This notion was probably inspired by Facebook’s research two years earlier, which suggested that:

[S]ince much of the content on social media services has an ephemeral nature, disappearing from view a few weeks after it was shared, a final means of stimulating communication could be the resurfacing of prior content. For relationships that have been inactive for some time, services could choose to highlight prior interactions, such as a status update or photos with comments. These stories could spur nostalgic memories and create a context to re-engage. (Burke et al., 2011: 9)

The researchers try to argue that the ephemeral design of social media is some sort of ‘natural’ objective and organic way platforms operate by, and not how they engineered this. But while Facebook tries to present this conduct as ‘stimulating’, ‘highlighting’ and ‘re-engaging’, what is actually happening is a calculated manipulation of time and emotions to increase engagement; our past has value for the future. In this way, although people are supposedly given the option to engage only the most recent and ‘fresh’ posts and photos, Facebook pushes its own ‘right’ way of what might be more (emotionally) engaging through specific instructions to its algorithm. Importantly, Facebook constantly **restructures its territory**, features and algorithms to push people into more engagement on the platform as this gives it more data to listen to, enabling it to produce richer data subjects for monetization.

Our past and the emotions and hence behaviors that it can ‘stimulate’ is a strategy to package the future of possible engagement. Platforms like Facebook try to be the producers of time, to be able to control and shape it according to their business model. As Facebook researchers argue, the newsfeed “algorithmically ranks content from potentially hundreds of friends based on a number of optimization criteria, including the estimated likelihood that the viewer will interact with the content” (Bernstein et al., 2013: 2). Ranking, then, is also influenced

by predictions of people's future engagement. As the digital advertising industry understood since the late 1990s, predictions about future actions can be more accurate by analysing people's past behavior. At the same time, it also means that our past dictates our future, and this is dangerous in ways that are hard to predict.

For example, as Julia Angwin has revealed that Facebook's advertising system enables advertisers to discriminate people according to their race (or 'ethnic affinity' as the platforms calls it). Angwin and Terry Parris Jr. show how they managed to create ads for housing while excluding Black, Hispanic, and other "ethnic affinities" from seeing these ads. In a separate article she showed how people were able to be excluded from seeing specific jobs ads according to their age (Angwin et al., 2017), and other characteristics. Additionally, Karen Hao shows (2019), Facebook's ad system also discriminates according the gender, by showing job ads for nurses and secretaries to a higher fraction of women. People with demographic (race, gender, sexual preference, socio-economic condition) and other characteristics (ableism or others) that deviate from an ideal norm are **filtered** out as they do not yield value or profit. They are excluded from specific options of living. Through this act of filtering, Facebook conducts a *rhythmedia* that orders people's personalized spaces according to their past and by doing so, prescribes their future.

Another important input that is measured and calculated by the newsfeed algorithm is the speed of people's mobile networks or Wi-Fi connections. This input is especially relevant for people who come from developing countries and whose connections are slow or less stable. As Chris Marra, Emerging Markets Product Manager, and Alex Sourov, Emerging Markets Engineering Manager at Facebook, argue, "if you are on a slower internet connection that won't load videos, News Feed will show you fewer videos and more status updates and links" (Marra and Sourov, 2015). This is a way for Facebook to listen to 'lesser able' bodies and restructure the territory in a way that will enable them to engage as well. It enables them to still be reproduced by not getting irritated by slow or lack of access.

However, there are other factors that instruct algorithms to calculate the inputs they use. These are advertisements that advertisers and brands pay and bid to be ranked higher on people's newsfeeds. This is usually semantically distinguished by calling sorting that is influenced by ad payment as 'paid' as opposed to 'organic' which is supposed to be the naturally sorted feed. Facebook Product Management Director on the ads team, Fidji Simo, argues that:

The value for advertisers is a combination of how much they bid for their ad as well as the probability that their ad will achieve the objective the advertiser sets for it—whether that's a click, a video view, an impression or anything along

those lines. Value for users is determined by how high quality the post is and whether it will impact the user experience. (Lynley, 2014)

‘Ad placement’ is carried out in a careful way whereby the end goal is to influence people towards a specific behavior. It is a calculative game trying to encourage advertisers to bid as much as possible while not driving away people, especially since most users prefer not to have ads on their newsfeed (Levy, 2015). This factor, of brands or advertising companies paying to appear, and preferably higher, on people’s newsfeed, is not described as part of Facebook’s newsfeed algorithm calculations. In their *How News Feed Works* section, Facebook presents several questions about the functions of its algorithm, specifically addressing the question, ‘How does my News Feed determine which content is most interesting?’. Facebook answers: “The News Feed algorithm uses several factors to determine top stories, including the number of comments, who posted the story, and what type of post it is (ex: photo, video, status update, etc.)”. There is no mention of ‘organic’, ‘paid’, or bidding of advertisers, brands and other third-party companies. However, as shown elsewhere in this book, they are a vital component in the way the newsfeed algorithms operate. Facebook’s relationship with advertisers is complex as they are the main funders of the platforms and yet Facebook cannot afford giving them too much power. This intricate dynamic is evaluated here below.

Standardizing the Digital Advertising Industry

Paying to be ordered by Facebook’s newsfeed algorithm means that advertisers need to act in congruence with what Facebook defines as legitimate advertising practices. An example of this surfaced in a video, called *Facebook Fraud*, published by the Veritasium² project on February 10, 2014. In the video, Derek Muller, the creator of this YouTube channel, shows how he tried to promote his page in the authorized—**licensed** way—using Facebook’s Promote Page. Muller discovered that of the approximately 80,000 Likes he got following his purchase, most came from Asia and that these ‘paid users’ clicked on a wide variety of brands and entities to avoid detection. However, these clicks did not result in engagements, which made the page, as Muller stated, ‘useless’. This was because these paid users, human or non-human, were not Commenting, Sharing, or Liking the content on his page, which signalled to the newsfeed algorithm that this content should be less prominent. This would then affect people who had engaged, since the Veritasium Page would not appear on their newsfeed. Consequently, even the

engaged people would not interact on his page since they would see it much less frequently or not at all.

The Promote Page service contrasts with buying Likes, an illegitimate business model whereby organizations and individuals can buy Likes through ‘click-farms’. These organizations hire low-paid workers from Asia to click on specific links/Pages/YouTube channels to increase the number of Likes/views of a post or video and, therefore, show a fake popularity counter for a brand. On October 3, 2014, Facebook’s Site Integrity Engineer Matt Jones provided tips for Pages to not buy fraudulent Likes:

Fraudulent likes are going to do more harm than good to your Page. The people involved are unlikely to engage with a Page after liking it initially. Our algorithm takes Page Engagement rates into account when deciding *when* and *where* to deliver a Page’s legitimate ads and content, so Pages with an artificially inflated number of likes are actually making it harder on themselves to reach people they care about most. (Jones, 2014, my emphasis)

Although Facebook argues that buying fake Likes is an ‘artificial’ behavior which will harm a Page’s performance or business goals, its own service acts in the exact same way. Similar to the politics of categorization shown through examining spam and cookies in the previous chapter, the only difference between the Promote Page and click farm methods is who **licenses** them, and who and how they are categorized. Facebook authorizes its own practice of paid service to get more Likes, whereas organizations that are not Facebook but conduct the same practice are labelled illegitimate ‘click-farms’. Facebook legitimizes its practices with a **license** to make its own definitions in the same way as the IAB and other advertising associations. The service can draw the line of legitimacy in its territory and standardize its trade practices, which benefit its business model. By doing so, it retains a monopoly over the production of territories and data subjects and the way they are ordered. Importantly, this is how it regulates rhythms in its territory. One of these regulation processes was to make a distinction between paid and unpaid ‘reach’, which it calls ‘organic’.

Naturalizing Organic Feed

Recently, the term ‘organic’ has become a catchphrase in Silicon Valley’s terminology. This term is usually taken to mean that things are ‘naturally’ ordered according to people’s engagement on the platform. As I have shown so far, however, there is nothing natural about the production of knowledge through media, and

this is not a new thing. The way that media practitioners have been conducting processed listening and rhythmmedia has been precisely targeting this notion of feeling natural, experiencing things in ‘real-time’, rather than technologically mediated.

Strategies of making ordering feel ‘organic’ were discussed in Chapter 3, in Bell’s attempt to present its decibel as an objective representation of the ordering of sounds in New York City. The telephone operator training programs were also meant to provide a ‘real-time’ mediation, turning them into efficient communication channels operating fast as machines, decreasing noise and delays. In Chapter 4, the organic ‘ordering’ was conducted by advertisers and publishers who traded people in the automated online market while hiding the multi-layered communication channels of Real-Time-Bidding at the back-end, facilitated by cookies and through the default browser design. ‘Organic’ has always been about ordering things and their relations while concealing the decision making processes behind them. It is about creating asymmetric power through mediated territories. There is nothing organic about rhythmmedia.

For Facebook the distinction between ‘organic’ and paid is used to sell a service that makes profit from advertisers and brands by intervening in the newsfeed’s algorithmic ordering. Facebook argues that there is a difference between organic reach and paid reach: “[o]rganic reach is the total number of unique people who were shown your post through unpaid distribution. Paid reach is the total number of unique people who were shown your post as a result of ads” (Facebook, 2016). As this definition illustrates, organic reach is a combination of the advertising industry **measuring** standards: unique visitors and page impressions. What Facebook implies is that when companies do not pay or bid for ads, there is no intervention in the ordering of the newsfeed algorithm. However, as discussed above, Facebook constantly changes both its design and algorithms to influence people behavior for more engagement.

Shedding light on paid versus organic reach can be seen in Facebook’s announcement on February 11, 2015, launching the ‘relevance scores’ to ads. This feature calculates a score between 1 and 10, which Facebook bases on the positive and negative feedback it foresees an ad receiving from a target audience. This service, argues Facebook, helps advertisers in several ways: “It can lower the cost of reaching people. Put simply, the higher an ad’s relevance score is, the less it will cost to be delivered. This is because our ad delivery system is designed to show the right content to the right people, and a high relevance score is seen by the system as a positive signal” (Facebook, 2015). Previous

metrics standards of the advertising industry are used by Facebook to predict future actions of its people—relevance is packaged as a product—personalization as an ideal experience.

According to Facebook, ‘positive’ interactions depend on the ad’s objective, but generally relate to views (impressions), clicks or conversions,³ whereas ‘negative’ interactions relate to users hiding the ad or reporting it. Whether positive or negative, *all actions* count, as they give indication of relevance to a particular user. In this way, even actions which the platform encourages people *not* to do and will not be ordered—still count and have value. However, this feature comes with a caveat. Facebook makes clear that, although the use of this relevant score might reduce advertisers’ costs, they still need to bid high to be delivered successfully to their desired audience:

Of course, relevance isn’t the only factor our ad delivery system considers. Bid matters too. For instance, if two ads are aimed at the same audience, there’s no guarantee that the ad with an excellent relevance score and low bid will beat the ad with a good relevance score and high bid ... As has long been the case on Facebook, the most important factor for success is bidding based on the business goal you hope to meet with an ad. (Facebook, 2015)

The higher the bid, the higher a business’s chance of success, or, in the territory’s terms, prioritized position and timing on the newsfeed. Bidding on Facebook, as it explains in its ‘Ad auction’ section addressed to advertisers, is a combination of three key factors: advertisers’ bids, estimated action rates and ad quality and relevance. This means that bidding is a key element in the way that Facebook’s newsfeed orders things.

Moreover, it shows how Facebook continues and develops another digital advertising industry market tool—real-time bidding—and render it into its own standard. This is another indication of how Facebook wants to be the central hub for advertising across the web, while forcing all other players to adopt its standards and measuring devices. As I mentioned in the previous chapter, Real-time-Bidding is a set of automated systems which enable different actors in the advertising industry to buy and sell ‘ad inventory’ (people and spaces) at the ‘back-end’ by bidding within milliseconds to shape people’s ‘real time’ experience at the front-end. All these systems cater to advertisers who, since the dot-com bubble crash, have become the main income source for social media platforms. The ad matching system of real-time-bidding, “examines all the ad campaigns placed by different advertisers in a particular time interval, their bids, and runs an auction

to determine which ads are selected” (Andreou et al., 2018: 3). Time is important because it is the way to place an ad at ‘the right time’ on people newsfeed:

Facebook has a piece of ad real estate that it’s auctioning off, and potential advertisers submit a piece of ad creative, a targeting spec for their ideal user, and a bid for what they’re willing to pay to obtain a desired response (such as a click, a like, or a comment). Rather than simply reward that ad position to the highest bidder, though, Facebook uses a complex model that considers both the dollar value of each bid as well as how good a piece of clickbait (or view-bait, or comment-bait) the corresponding ad is. (Martinez, 2018)

This rhythmmedia strategy illustrates that one of the ad auction’s main purposes is to push people into action; baiting for more engagement. Such ‘baiting’ is also the same mechanism that promotes mis- and dis-information and other sensational material which attract a lot of ‘engagement’ and at the same time threatens our societies. As Siva Vaidhyanathan argues:

One of the keys to the success of “fake news” is that often these pieces were designed expertly to play both to the established habits of rapid sharers of Facebook content and to Facebook’s EdgeRank algorithm. They reinforced existing beliefs among a highly motivated subset of Facebook users. Absurd or controversial posts are likely to be shared and cheered by those willing to believe them and dismissed, commented upon, argued about, and shared by those who dismiss the veracity of those posts. If someone sees an obviously fraudulent claim on a Friend’s Facebook site and responds to it, it’s likely to flare a long and angry argument among different camps. As we know all too well, Facebook is designed to amplify that sort of engagement. So the pieces spread (Vaidhyanathan, 2018: 184).

The ordering of things in specific times and spaces is used to influence people’s behavior towards a specific action, a ‘desired response’. Therefore, their actual validity, truth, or facts are irrelevant here as long as they are more engaging. An important component of the bidding is ‘estimated action rates’, which is the data gathered from listening to people’s behaviors. Such **measurement** indicates how many times, at what times and at what frequency people engage with things and other people (as discussed above with Sponsored Stories) on the platform. The data are assembled into a dynamic archive by conducting processed listening into people’s actions on multiple spaces within *and* outside Facebook. These data, people’s past rhythms, are then feeding the ordering of ads on people’s newsfeed to influence their future behavior towards more engagement.

Platforms use algorithms to, as Foucault would argue, enact power over people's actions. In the case of Facebook, the company bases its "estimates on the previous actions of the person you're trying to reach and your ad's historical performance data. We recommend optimizing for an action that happens at least 15–25 times per week (though more than that is better) for best results". The most repetitive actions of people can be harnessed and used as an indicator for an estimate future action in the bidding for a better rhythmmedia. This is precisely why it is important to create a database of people's behaviors that is constantly produced, because this is creates an endless source of revenue. That dataset is produced from the ongoing processed listening to people's pace, frequency of actions, the time of the day/week the make this action, and time spent on specific objects and relations. As Shoshana Zuboff argues on this new business model:

This entails another shift in the source of surveillance assets from virtual behavior to actual behavior, while monetization opportunities are refocused to blend virtual and actual behavior. This is a new business frontier comprised of knowledge about real-time behavior that creates opportunities to intervene in and modify behavior for profit ... This new phenomenon produces the possibility of modifying the behaviors of persons and things for profit and control. (Zuboff, 2015: 84)

Facebook has been measuring people's actions and time spent on specific things to get these 'monetization opportunities' even if there is no visible indication for it (such as liking, sharing, or commenting). The company measures how often people have interacted with things and people in different time intervals (Backstrom, 2013). Furthermore, the platform has been measuring not only which video people watch but how long they watch it (Welch and Zhang, 2014). The platform also takes into account the time spent on stories (Yu and Tas, 2015), and also takes "into account the amount of time people spend on a particular story relative to other content in their News Feed" (Wang and Zhou, 2015). Here, Facebook illustrates how the amount of time people spend on things are statistically measured and compared to their engagement with other things. Just like the digital advertising industry, Facebook constructs specific time-based **measuring** rules that indicate a person's frequent action in relation to another person or object. When the duration and rhythm of actions are higher than other actions, this is an indication for a preference which can be commodified and traded in the ad auction.

"Just understanding time is huge", as Mark Rabkin Facebook's VP of engineering for ads says, "[w]e want to understand whether you're interested in a certain thing generally or always. Certain things people do cyclically or weekly or at

a specific time and it's helpful to know how this ebbs and flows" (Rabkin quoted in Mannes, 2017). Such frequency-based rules help produce predictions that can be packaged into products. As the company argues, such measurements can "control the amount you spend on each audience, decide when they will see your ads, and measure their response. The ad delivery system will optimize delivery for the best-performing ad in an ad set" (Facebook Business, 2014). People's behaviors and temporal orderings are commodified and traded for the highest bidder. However, Facebook knows that people do not want to see ads on their newsfeed. On November 14, 2014, Facebook made an announcement:

People told us they wanted to see more stories from friends and Pages they care about, and less promotional content ... What we discovered is that a lot of the content people see as too promotional is posts from Pages they like, rather than ads. This may seem counterintuitive but it actually makes sense: News Feed has controls for the number of ads a person sees and for the quality of those ads (based on engagement, hiding ads, etc.), but those same controls haven't been as closely monitored for promotional Page posts.

Facebook promises to instruct its newsfeed algorithm to decrease the 'organic' reach of Pages' promotional content. In other words, by saying that promotional organic reach posts will decrease, Facebook hints that Pages need to purchase and/or bid for 'paid' reach to be ordered on people's newsfeeds. One of the 'traits' of these overly promotional posts is 'Posts that reuse the exact same content from ads'. Brands that aim to emphasize their messages can repeat the same messages, once when they pay for them through Facebook's paid services and again when they post them for free. However, this creates what Facebook considers to be excessive rhythm, a burden on the system. Here, Facebook trains brands and advertisers not to share excessively, just as it does with its subscribers (more on this below). In this way, it regulates certain rhythms by pushing companies to buy and bid rather than repeating posts as promotional and bought. Beyond regulation of advertisers the platform also regulates its subscribers by establishing what is a healthy body. To do that it uses its Facebook Immune System algorithm.

Maintaining the Immune System

On November 10, 2011, Facebook revealed its National Cybersecurity Awareness Month Recap and the Facebook Immune System (FIS) algorithm. During October, Facebook celebrated cyber security by announcing several new security

features, the most important of which was FIS: “We have invested tremendous human, engineering, and capital resources to build a system for detecting and stopping those that target our service, while protecting the people who use it. We call it the Facebook Immune System (FIS) because it learns, adapts, and protects in much the same way as a biological immune system” (Facebook, 2011).

According to Facebook’s researchers (Stein et al., 2011), FIS is machine learning algorithm that scans all the behaviors performed by people on Facebook to classify them according to specific categories and detect anomalies. As of March 2011, the researchers were conducting “25B checks per day, reaching 650K per second at peak” (Stein et al., 2011: 1). In this way, people’s behaviors are being listened to and statistically measured, examined and categorized in ‘real time’ to create a normality curve of the healthy *human* body. Bodies with irregular rhythms were deemed sick or non-human and categorized as spam. This shows how, when an irregular behavior occurs, in terms of its frequency and rhythms (compared with others), Facebook can infer that this is an unwanted ‘spammy’ behavior. This categorization relies on the platforms’ definition of what is a normal and legitimate behavior:

Algorithmically, protecting the graph is an adversarial learning problem. Adversarial learning differs from more traditional learning in one important way: the attacker creating the pattern does not want the pattern to be learned. For many learning problems the pattern creator wants better learning and the interests of the learner and the pattern creator are aligned and the pattern creator may even be oblivious to the efforts of the learner. (Stein et al., 2011: 1)

Presenting itself as ‘the learner’, Facebook suggests that it has the same interests as the ‘pattern creators’, the people who use the platform. However, as I discussed above, there is a set behavioral norms embedded in the platform’s affordances. Despite my wishes to establish an experience of a recent, chronologically organized newsfeed, Facebook repeatedly changed my newsfeed preferences against my wishes. Therefore, there are other factors that are fed into this machine learning computational calculation, which are not mentioned.

The FIS consists of five mechanisms: Policy Engine, Classifier Services, Feature Extraction Language (FXL), Dynamic Model Loading, and Feature Loops (Floops). The first step is the Policy Engine that applies all the relevant policies engineered into the algorithmic calculations by Facebook on people’s actions: “decision about how and when to respond can depend on business or policy considerations. For example, an action in one region might be more creepy or undesirable than in another region” (Stein et al., 2011: 6). In this way, the Policy Engine

conducts rhythmmedia on people, features and their connections to express the local business logic and respond accordingly – constructing the deviant is contextual. For example, “blocking an action, requiring an authentication challenge, and disabling an account” (Stein et al., 2011: 3), intervening in specific times and spaces, then, is important for the frictionless operation of the platform presented as ‘real-time’ experience.

The Classifier Services categorize people’s behaviors according to the Policy Engine’s guidelines and update the system accordingly. This means that the company holds the power to decide which people and actions are legitimate on its platform and which ones are not. The Floops component, is the dynamic archive discussed above, which stores and retrieves data about people’s behaviors. It is “a shared memory about past observations and classifications” (Stein et al., 2011: 7). Floops implement three mechanisms—Inner, Middle and Outer—to listen people’s actions in different time intervals, capturing the valuable repetitions. The Inner Floop, counts the amount of times a specific action is made for a defined period of time: “For example, the number of times a URL has been posted on a channel in the past hour” (Stein et al., 2011: 7). The repetitive rhythms of posting are fed as inputs for classification on whether they harm or benefit Facebook.

The Middle Floop applies more complex operations beyond counting, specifically focusing on IP addresses and URLs, which help in understanding where the behavior comes from and establishing whether they are human, bot, or hired click workers. The Outer Floop uses the Memcache, which is a distributed memory object caching system meant to speed up the dynamic ordering of algorithmically mediated platforms. Behaviors across the web are logged daily to the Memcache, and in this way, the Outer Floop understands whether an action was performed by many people across multiple spaces. This enable it to detect harmful rhythms (as defined by Facebook), conducted outside Facebook and act upon them within the platform by filtering them out.

The advantage of the FIS algorithm is its fast update for new models and policies: ‘[a]ttackers change behavior a lot faster than people change their buying patterns’ (Stein et al., 2011: 3). For example, the researchers provide a timeline of phishing to show how time and frequency play important roles in detecting ‘attackers’. Such ‘abnormal’ behavior is detected by spikes of high frequency of similar behavior which is inferred as deviant. Rhythms and time are extremely important, then, for ensuring Facebook and its Open Graph remain ‘safe’; but also, as discussed above, they help in producing a knowledge database of people’s behavior that can be monetized. Understanding if someone is a human, bot or a

hired click worker is key here, as people's 'estimated action rates' are an important metric in an auction.

The social graph in this case functions as more than a dynamic archive; it not only continuously stores people's behaviors but also orchestrates their rhythms; it "contains user information and facilitates connections between people to share information. It has two basic properties valuable to attackers. It stores information and it is a powerful viral platform for the distribution of information" (Stein et al., 2011: 3). This 'facilitation' and 'powerful viral' features are enacted by rhythmmedia which conducts the way sociality is orchestrated. Repetitive behaviors are key to FIS's operations, because they enable Facebook to learn what are people's preferences and orchestrate the *when* and *where* people, objects and their relations will connect or disconnect on the platform according to a rhythm that yields more value.

Importantly, the FIS algorithm uses two main elements to protect the Open Graph: first, global knowledge; and second, users' feedback (such as reporting violations, as discussed below). User feedback means processed listening to people's behavior while they engage on and with the platform. This could be an 'explicit' behavior, such as marking something as spam, *and* 'implicit' behavior, such as deleting a post.

'Implicit' feedback is as mentioned above, every type of action or just 'living' on the platform—clicking, viewing, pausing, posting excessively, deleting a post, unfriending/unliking, visiting a profile, writing on Messenger, hovering over something, logging patterns (device, location, time of the day, duration, operating system, broadband) etc.—all have value to its dynamic database. This is an indication that Facebook treats *any kind* of action on its platform as valuable data. This is conducted within Facebook's territory *and* outside of it ('global knowledge') thanks to its social plugins that listen, **measure**, collect and categorize people's behavior across the web and then create a database to conduct rhythmmedia according to its business model and advertiser bidding. So silent actions such as deleting posts have a value for Facebook, even if they are not heard by other people.

Measuring people's behavior within Facebook is not enough to understand people's everyday rhythms, and that is why the company also uses 'Global knowledge', meaning "the system has knowledge of aggregate patterns and what is normal and unusual" (Stein et al., 2011: 2). The dataset is never finished and is constantly changing, which means that Facebook can adjust its strategies and algorithm according to people's behavior by tweaking different features that suit its business model.

Facebook relies on its subscribers' feedback (loop) to maintain the services' equilibrium. Thus, training its subscribers to behave in particular ways and encouraging them to report and Like is paramount for the smooth functioning of the dynamic territory. Facebook researchers argue that spammy behavior, depends on culture and region, and that, generally, "the working definition of spam is simply interactions or information that the receiver did not explicitly request and does not wish to receive. Both classifiers and the educational responses need to be tuned for locale and user" (Stein et al., 2011: 4). Interestingly, when people do not want a certain interaction with Facebook (newsfeed sorting, for example), this action is not registered as spam. This is because Facebook has its own definition of unwanted behavior within its territory, and this is how such behaviors are categorized, not according to people's understanding. The researchers identify three main causes that can jeopardize the Open Graph: compromised accounts,⁴ fake accounts and creepers. I will focus on the latter two, as they show Facebook's approach to securing its territory and **training the bodies** of its subscribers to become well-behaved **filters**.

The most interesting threat that can harm the Open Graph is *creepers*. Creeper, as mentioned in Chapter 2, was also considered to be one of the first computer viruses, which spread during the 1970s through ARPANET's network. This category of people cannot be found in any of Facebook's terms, when queried in the Help section, or on Facebook's posts on FIS. The likely reason for this is that creepers are 'normal' people. As Stein et al. (2011) describe this spammer category:

Creepers are real users that are using the product in ways that create problems for other users. One example of this is sending friend requests to many strangers. This is not the intended use of the product and these unwanted friend requests are a form of spam for the receivers. (Stein et al., 2011: 4)

But this can be fixed, argue the researchers, because the company has discovered that "the best long-term answer is education" (Ibid). So although sending friend requests to people is one of the core actions promoted by the platform, when the frequency is too high the behavior is categorized as spammy. Thus, training people towards Facebook's desired rhythms is paramount to the frictionless functioning of the service. Rhythms are extremely important, then, for ensuring Facebook remains 'safe'; but they also help in producing a database of people's behavior that can be monetized for advertising purposes.

Because they make profit from people's rhythms, Facebook does not make actions such as 'disconnectivity' (unfriending, unfollowing, unliking, leaving a

group, etc.) available to others. As Nicholas John and Asaf Nissenbaum show in their analysis of 12 social media APIs, “the pattern of excluding disconnectivity data from APIs is indicative of an overarching logic” (John and Nissenbaum, 2019: 9). This logic means that the company does not want people to be ‘educated’ and know about rhythms that do not bring value and define them as ‘anti-social’. Such ‘negative’ actions are nevertheless still valuable for Facebook as it informs the company about the rhythms of people and what motivates or discourages their engagements.

On the other hand, Facebook does not want to provide data to advertisers which can help them understand people’s rhythm in the same way Facebook does. ‘Negative’ behaviors are also valuable and provide important input for Facebook on how to order its platform. Therefore, the platform offers data on disconnectivity as a service that advertisers should pay *and* bid for, as discussed above, with the use of ‘negative signals’ of the Relevance Score. By educating people to behave in a desired rhythm and educating advertisers to pay more, Facebook conducts rhythmmedia towards a sociality that yields more value. The multiple ways in which Facebook produces data subjects by **training their bodies** will be explored in the following section.

You Better Work

This section examines how Facebook continuously shapes people’s behavior in its territory, while controlling, prohibiting, and engineering behaviors it considers to be dangerous or problematic to its business model. I argue Facebook produces people into multiple subjects, including the communication channel, as well as the producers (sender), consumers (receiver), and the message. The main type of subject that people are produced into is the **filter**, which helps to maintain the equilibrium of Facebook.

Each of these subjects requires **training of the body** to understand the desired way to behave. One element of training is the architecture (how things connect or disconnect and how movement is orchestrated) design (the expressions and relations options) provided by platforms (as discussed above), which guides people on how to present themselves and interact with others. Another element of the training program is filters, encouraging people to indicate in various ways what interests them and what does not. People do this in four ways: liking, reporting, conducting surveys, and listening. I elaborate on these below.

Clicking Machine

The Like button was introduced on February 9, 2009, in a post where Facebook compared the button with a rating system, with the “new ‘Like’ feature to be the stars, and the comments to be the review” (Chan, 2009). The Like becomes a sorting numerical unit that can be monetized and exchanged. Importantly, Liking is a form of **filtering** that helps Facebook understand what people find more interesting than others across its territory. People become **filtering** machines by indicating what they find worthy of a Like. The motivation behind the Like (interest, like, parody, sympathy, care, etc.) does not matter since, for Facebook, the fact that a person has dedicated time to click on a particular piece post/content means that they are **filtering** and ranking what is worth their engagement.

By doing so, the service strips the nuance, context, ambiguity, and feelings that make people human. It educates people to think in quantified, simplified ways about themselves and their relations with others; it produces them as data subjects that are narrowed to the platform **measuring** metrics. This kind of activity is then used as an ‘engagement’ metric that Facebook can provide to advertisers when managing their Pages.

The Like button enables a quantified, standardized, comparable exchange unit/currency, whereby an aspect, or several, of human expressions and interactions can be **measured**, analyzed and become a product. Clicks, as discussed in the previous chapter, were one of the first metrics in the web economy, which advertisers have been using since the late 1990s. What Facebook is trying to do, however, is more akin to what Bell tried to do, as discussed in Chapter 3, in making the decibel the standard unit over the ‘sone’. Facebook, similarly, has tried to make the Like standardized across the internet. In Chapter 4, advertising companies also debated the meaning and method of measuring clicks and came to an agreement through the IAB standardization project. Facebook aims to disrupt this and push its own definition of measuring and producing subjects. All objects, people, their behaviors, and interactions could be measured and represented by the Like button.

Excessive Behaviors

As discussed in the previous chapter, spam’s most common description is a form of excess, a burden on the system, and this notion returns when examining Facebook as well. In a post about the importance of keeping activity on Facebook authentic, Matt Jones, Facebook’s Site Integrity Engineer, argues that the service

limits the amount of Likes an account can make in order to turn this spammy activity (liking many times) to an inefficient practice. When an account Likes things many times, at an unusually high frequency, the service makes sure the account is legitimate. This is because:

[B]usinesses and people who use our platform want real connections and results, not fakes. Businesses won't achieve results and could end up doing less business on Facebook if the people they're connected to aren't real. It's in our best interest to make sure that interactions are authentic. (Jones, 2014)

The rhythm of behaviors, as seen with the FIS algorithm, becomes an indicator of authenticity and of being human. High frequency of actions is an indication that the individual entity doing the Liking is not real, a robot, or a click-farm worker, as discussed above.

Sharing on Facebook also has its limitations. In the *Graphic Content* section of its community standards, Facebook warns its users to use its most advocated action—Sharing—‘in a responsible manner’. The service warns its subscribers to “[a]lways think before you post. Just like anything else you post on the web or send in an email, information you share on Facebook can be copied or re-shared by anyone who can see it”. Facebook not only promotes self-censorship regarding the kind of content people should share, but also urges users to carefully consider *the audience* they are sharing to, and if the content is appropriate. With Facebook’s privacy settings defaulting to all posts being public, people are encouraged to perform active self-censorship, rather than making the content private to begin with and then allowing the user to choose to share it to a wider audience.

Not long after Facebook allocated spam its own sub-section in the Security section of its terms of use, on April 10, 2014, the service released an announcement titled ‘Cleaning Up News Feed Spam’. According to the post, Facebook targets three types of what it considers to be spammy behavior: Like-baiting, frequently circulated content and spammy links. The first type of ‘Like-baiting’ which is “post explicitly asks News Feed readers to like, comment or share the post in order to get additional distribution beyond what the post would normally receive” (Owens and Turitzin, 2014). This might seem as counter-intuitive as Facebook repeatedly encourages material which is engaging, no matter what the content is. In the second type of spammy behavior, Facebook wants to control people and Pages that are re-sharing content over and over again, even if it is interesting: “We’ve found that people tend to find these instances of repeated content less relevant, and are more likely to complain about the Pages that frequently post them” (Owens and Turitzin, 2014). It also comes as a warning to people who re-share content and by doing so

create a burden on the newsfeed algorithm. Moreover, Facebook redesigned the repetitive share affordance to cluster the link so that if I, my Friend Ellen, and the *New York Times* all share a link, it will just show up as ‘Elinor, Ellen, and the *New York Times*’ all shared a link now—collapsing the intrusion into the newsfeed.

Both ‘Like-baiting’ and frequently circulated content is about increasing the distribution of things, which is the main activity that Facebook encourages, prioritizes, and monetizes. But, this activity should be regulated according to what can yield the most value. Repetitive behaviors create surplus on Facebook’s newsfeed as it does not add new interactions and might confuse the algorithm and **measurement** of people’s behaviors by feeding it with ‘double’ data relations.

Importantly, controlling Pages to make possessive attempts to monetize people’s engagement is another way for Facebook to regulate its internal market according to its own rhythmmedia. It does so by prioritizing Pages that pay and bid to be ordered at the top of people’s newsfeeds. Just like with the previous chapter, rhythms that bring profit to media companies like web-cookies or in this case paying and bidding to be ordered on the newsfeed, will be legitimized while similar practices by other advertisers or people who do not profit the big companies would be categorized as spam. In this way, both people and Pages are policed, disciplined, and managed to behave in rhythms that Facebook considers legitimate.

Another example of restricting and controlling behaviors on Facebook is a change in excessive use of the ‘Hide’ option. People on Facebook are permitted to Hide posts, meaning that they will not see the particular post and can choose to not see any posts from that person or just see fewer posts from that friend. On July 31, 2015, Facebook released a post addressing the phenomenon of people who ‘hide too much’. According to Sami Tas, Software Engineer, and Meihong Wang, Engineering Manager:

[S]ome people hide almost every post in their News Feed, even after they’ve liked or commented on posts. For this group of people, ‘hide’ isn’t as strong a negative signal, and in fact they may still want to see similar stories to the ones they’ve hidden in the future. To do a better job of serving this small group, we made a small update to News Feed so that, for these people only, we don’t take ‘hide’ into account as strongly as before. As a result, this group of people has started seeing more stories from the Pages and friends they are connected to than in the past. Overall, this tweak helps this group see more of the stuff they are interested in. (Tas and Wang, 2015)

While people use the options offered by Facebook's design, the service 'nudges' them towards its own interpretation of how to use them. Such 'nudge' mechanisms are not notified to people in an explicit way, but rather in either ignoring their selected preferences (of hiding content) or adjusting architectural options. In this way, Facebook is conducting rhythmmedia, altering people's possible choices to suit its business model. Therefore, what is at stake here is the way Facebook produces data subjects through architecture and algorithmic designs that prescribe their options of living in the platform, and consequently control and produce behaviors accordingly.

The excess of Likes, Hides, or Shares can have negative influence on the accuracy of Facebook's newsfeed algorithm, because it statistically measures and calculates such actions to establish people's newsfeed orderings. Thus, for each action to be as valuable as Facebook intends it to be in the process of **filtering** data, there is a need for the service to police what it considers to be irregular rhythms of being. This can be done by Facebook categorizing this problematic activity as spam. Just as Bell developed *A Design for Living* program to educate the telephone operators, Facebook tries to educate people, advertisers, companies and its algorithms by **training their bodies** for the desired behavior in its territory. Training in the form of social and algorithmic engineering is something that Facebook is very interested in, and it also serves as a biopolitical tool to direct and manage people in a specific direction.

Asking As If It Matters

Another way for people to provide information that can help **filter** content and behaviors on Facebook is surveys. Facebook sends people surveys in two main ways: one, positioning surveys on the bottom right-hand side of the platform, and two, occasionally, Facebook circulates surveys to people, which appear on the whole screen once they enter the platform, to better understand what people think about its newsfeed. Contrary to the surveys conducted in New York City in the 1920s, here, the results of the ways that the data are processed and used are concealed from people. It is difficult to know exactly how the data derived from the surveys informs Facebook's algorithmic or architecture changes. I received the second type of survey three times during the data collection period: on October 30, 2013, July 2, 2014 and July 13, 2014. The first survey from 2013 provided ten different kinds of post and I had to rate whether I wanted to see more of these posts on Facebook using a five-star scale.

The other two surveys were delivered in July 2014, after the exposure of Facebook emotion experiment. The July 13 survey presented 15 posts that asked the same question: ‘How much do you agree with this statement? This post feels like an advert’, and the user was given five response options: strongly disagree, disagree, neither agree nor disagree, agree or strongly agree. All of the posts were from Facebook Pages, some that I had already Liked and some I had not (such as Amazon.com). Several posts were shown from the same Page I Liked, such as Resident Advisor (an electronic dance music magazine). The second survey of the two was circulated on July 2, 2014, and it differed from the others as it asked questions on ‘the Facebook experience’, while particularly focusing on the Facebook Graph Search feature that was launched on July 15, 2013. What these surveys show, is that Facebook needs humans to improve its algorithms. Behind the ‘organic’ experience it tries to sell, there are people who work for the platform—either its subscribers or its hidden workers, for free or for low wage—to fine tune the algorithm and provide the contextual meaning that is so needed.

On December 4, 2015, Sami Tas, a software engineer at Facebook, and Ta Virot Chiraphadhanakul, Data Scientist, published a post about the thousands of surveys conducted every day to understand the reasons for the popularity of videos. As they argue:

We survey tens of thousands of people every day, and for the story surveys, we ask them if they prefer a particular viral post to another post. With this update, if a significant amount of people tell us they would prefer to see other posts more than that particular viral post, we’ll take that into account when ranking, so that viral post might show up lower in people’s feeds in the future, since it might not actually be interesting to people. (Tas and Chiraphadhanakul, 2015)

What Facebook’s data scientists argue here is that ‘viral’ stories are anomalies, and that, since anomalies can influence the newsfeed algorithm towards what they consider as bias ordering, there is a need to take special measures when it comes to such unusual rhythmic behaviors. Therefore, increased rhythm (termed ‘high volume’) on Facebook needs to go through another human **filtering** mechanism that helps Facebook understand if this anomaly is legitimate (and preferably paid for) or whether it is a hoax. Since the results of the two kinds of survey are never publicly published or available to anyone but Facebook, it is difficult to establish how, why and when such anomalies occur, if they are anomalies to begin with, and whether they are treated as legitimate or illegitimate. But what is clear is that while Facebook uses many indicators to understand how people behave, some of them are silent.

Listening: The Silent Actions that Count

Behaviors on Facebook do not have to make a sound, they can be silent or not be considered as an ‘action’ at all. Taina Bucher (2012a) argues that an Edge, one of Facebook’s newsfeed algorithm criteria, means any interaction with an object on Facebook. This can be done through the social plugins that Facebook provides, such as the Like, Share, or Comment. It can also explain the name of its primary sorting algorithm, EdgeRank, which orders, sorts, and **filters** objects and people according to their interactions and the value assigned to each of them.

But precisely because an Edge is *any* interaction, then **filtering** and ordering people or objects is also determined by actions and relationships that do not receive any cues. For example, if I visit one of my friend’s profiles, EdgeRank will ‘know’ that I am interested in this friend and show me more posts on the newsfeed from her. This is elaborated in the sub-section of Facebook’s Data Use Policy *Other information we receive about you:*

We receive data about you whenever you use or are running Facebook, such as when you look at another person’s timeline, send or receive a message, search for a friend or a Page, click on, view or otherwise interact with things, use a Facebook mobile app, or make purchases through Facebook.

Any kind of interaction on Facebook is processed listened (including people’s devices, their internet connection speed, location, etc.). The platform listens to people even when it is not visible to others, and this then informs the newsfeed and FIS algorithms filtering mechanism. Because such actions can only be listened to by Facebook it is difficult to know what and why certain actions are silent and others not.

Cristina Alaimo and Jannis Kallinikos (2017), for example, call the actions people do on social media as social data (posting or uploading). By doing so, they automatically adopt the way the platform defines sociality while disregarding many other types of possible actions. As John and Nissenbaum argue “the theory researchers develop might be shaped by the kinds of empirical materials the tools at their disposal are able to give” (John and Nissenbaum, 2019: 9). Unfortunately, they also make this problematic assumption by arguing that social media conceal what they call ‘negative’ actions such as disconnecting, unliking, muting a conversation and unfriending. As shown above here, all actions count and some are similar to ‘positive’ actions, it is their frequency that harms the business models of these companies. A main action that these companies encourage is listening,

which receives negative connotations with the notorious nickname of lurking. However, it is still endorsed as a form of sociality, but one that does not receive visual or audio cues.

Facebook's researchers have been interested in understanding people's listening practices in quantitative ways to encourage them to engage more and thus bring more value to the service. In an article called 'Quantifying the Invisible Audience in Social Networks', Bernstein et al. (2013) argue that they want to understand the way people perceive their invisible audiences. They argue that this knowledge can help 'science' and 'design' to influence content production and self-expression on Facebook's territory, or in other words, increase engagement and hence profit:

The core result from this analysis is that there is a fundamental mismatch between the sizes of the perceived audience and the actual audience in social network sites. This mismatch may be impacting users' behavior, ranging from the type of content they post, how often they post, and their motivations to share content. The mismatch also reflects the state of social media as a socially translucent rather than socially transparent system. Social media must balance the benefits of complete information with appropriate social cues, privacy and plausible deniability. (Bernstein et al., 2013: 8)

The reproduction of territory and data subjects must be balanced; the strategies Facebook wants to deploy on people must be subtle enough not to scare them away and yet still influence them and their peers to engage more time on the platform. The researchers undertook this research to understand whether design changes that provide quantitative metrics to show people the actual audience that has seen their posts will benefit the platform. It shows that Facebook is concerned with which metrics to show to encourage more engagement, and will change the architecture accordingly, producing asymmetric power relations with an architecture that restricts people from listening deeper. Here, we discover that concealing metrics is the preferred interface design, as not showing them might have damaging effects. This does not necessarily translate into negative actions, but rather actions that will not yield more engagement.

Using Facebook's data logs, the researchers (Bernstein et al., 2013) compared surveys asking users how many people they thought were exposed to their posts. Bernstein and colleagues's methods revealed that, similar to web browsers, Facebook also has server logs documenting every kind of behavior within its territory. With this dynamic archive, Facebook is able to have more listening capacities and, therefore, have more knowledge on its members. In turn, this makes Facebook's

listening capacities the most powerful because only the service can access such datasets. Facebook's researchers point to the limitation of data logs as a measuring tool, saying that, "depending on how the instrument is tuned, it might miss legitimate views or count spurious events as views" (Bernstein et al., 2013: 8). Similar to Bell's measuring devices, measurement depends on the media practitioner's expertise to operate the listening tools and infer data from them.

All actions count, whether they are silent or make a sound. It is the actions that make noise, a disturbance to the business model, that need to be controlled, managed and, hopefully, eliminated. It is Facebook that decides what noise is, however, this definition keeps changing according to its business model, the advertisers who bid, its subjects, journalistic articles and the territory.

Bucher (2012a) argues that a factor that drives people's behavior on Facebook is the threat of invisibility and of not being considered important enough. But people are also encouraged to behave silently. For example, on the right-hand side, in the 'Chat' option, Facebook shows when people's friends last visited the platform, thereby enabling to 'monitor' on friends' behavior without them knowing. In fact, inasmuch as Facebook rewards people in making them or their interactions louder, the service also promotes interactions that can broadly be called 'listening'.

Such listening practices are not heard by other people, but they are heard by Facebook, which measures, categorizes, and archives these insights as valuable data in its server logs. Facebook could have easily implemented the possibility to show people who has looked at their profile, as it has done with its messaging feature, Messenger. This latter option shows a read receipt, by marking the bottom of the messaging space with one tick, including the date and time it was read.

Listening makes people feel more empowered as they, too, have the capability to know people and things. What these features also do is normalize a certain kind of listening, that which is associated with spying. It also shows Facebook manages a particular rhythmmedia, whereby it aims to amplify certain actions over others, but these can be both silent and loud, because everything counts in large amounts.

Majority Report

Another way to turn people into **filters** is through reporting. Different social media platforms have different mechanisms of reporting content, sometimes also called 'flagging'. This mechanism allows people to inform the service that a particular piece of content or behavior is unwanted for various reasons, such as being

hateful or abusive, violent, sexual, harmful, infringing copyright, and etc. According to Crawford and Gillespie:

[T]he flag represents a little understood yet significant marker of interaction between users, platforms, humans, and algorithms, as well as broader political and regulatory forces. Multiple forces shape its use: corporate strategies, programming cultures, public policy, user tactics and counter-tactics, morals, habits, rhetorics, and interfaces. (Crawford and Gillespie, 2016: 410)

They argue that, by not allowing a debate about the values in their services, platforms control public discourse, including how and what should be debated and what should be heard in their territories. This is also illustrated in the limited form of communication such ‘flags’ allow. Facebook, for example, provides very limited means for people to report content. It provides only categories that can benefit its business model. In the 2015 version of Facebook’s community standards, it indicates that:

Our global community is growing every day, and we strive to welcome people to an environment that is free from abusive content. To do this, we rely on people like you. If you see something on Facebook that you believe violates our terms, please report it to us. We have dedicated teams working around the world to review things you report to help make sure Facebook remains safe.

Facebook’s subscribers are expected to serve as quality assurance (QA) for ‘community standards’, for free, however, individual users were not involved with creation of these community standards, and are not included in the mechanisms keeping their accounts safe. In *How to Report Things* section, people are given illustrations and step-by-step guidance on reporting abusive and spammy content. In another section of their Community Standards dedicated to safety information and resources, people are advised to “[l]earn how to recognize inappropriate content and behavior and how to report it”. Here, as in the previous chapter regarding educating EU citizens, people are expected to learn to be responsible educate themselves and others to keep Facebook safe.

Facebook encourages people to report things that are not listed in its terms or community standards through the social reporting feature, which was introduced on March 10, 2013. Social reporting means that, if someone does not like something that is posted on their newsfeed, they can ask that friend to remove it. By doing so, people are regulating, controlling and managing *each other* in a biopolitical way. This then serves a second purpose of helping Facebook to define and enforce ‘good’ behavior. This is a way to educate people to train one another to behave in a specific way within Facebook’s territory.

Reporting, then, allows Facebook to show that it cares about what people want and to have another **filtering** mechanism for the kind of things it should not order on the newsfeed, thus helping to tune the algorithms. As with many other platforms, after people report to Facebook, they do not know what happens with the report, or how many other people have also reported the same thing. On April 26, 2012, Facebook launched its Support Dashboard feature, which allows people to know when their report has been received and also gives an indication of why an action was taken or not with regard to the report. Facebook, however, does not reveal how many people have reported something (post, Page, or person). Such information can persuade people to complain and even lead to them rebelling against certain decisions (for example, removal of female nipples or mothers who breastfeed).

In the 2015 community standards, the company addressed this by saying that, “[t]he 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”. This statement, however, leaves out what *does* impact its decisions. Just as Bell wanted to provide counselling to its rebellious operators and not allow them to unionize by **de-politicizing** them, here, Facebook uses similar strategies. In this way, platforms’ personalized experience discourages mass actions such as knowing that many people reported, objected or complained about something and taking it forward to Facebook, journalists, municipalities, courts, and governments.

In the spam section (under the security section), people are encouraged to report spam: “By doing so, you will be playing an important role in helping us protect other people from scams”. But people are also given advice on how to keep their digital bodies safe and clean from spam by using various methods such as protecting passwords, not sharing login information, not clicking suspicious links, updating browsers and running antivirus software. Maintaining a healthy body, as Bell ensured with various diet and exercise regimes for its operators, is crucial for subjects who function as communication channels and **filters**. While people are encouraged to report, what happens to the reports is handled by Facebook’s hidden processors: Commercial Content Moderators (CCM) and Feed Quality Panel (FQP).

The Human Processors

Facebook employs different kinds of workers to help maintain its multiple communication channels, to produce a profitable trade territory. Workers include newsfeed ranking engineers, data scientists, software engineers, product

managers, researchers, security officers and many others. Along with employees whose workplaces are Facebook's offices, there are others who are less prominent. These workers reside in other places and, sometimes, are not officially declared as Facebook employees: first, Facebook's cheap, outsourced labor, known as content moderators; and second, Facebook's raters, known as the Feed Quality Panel. Their work is crucial to **filtering** unwanted behaviors from Facebook, but they are kept hidden for several reasons: to naturalize their work as part of the 'organic' and natural algorithmic processes, to create the feeling of 'real-time' uninterrupted experience, to ensure they are not accountable for their work, to prevent them from having to disclose their working criteria and ethics, and to save money. In this section I illuminate their function as filters.

Filtering the Rubbish

Several decades after the automation of telephone operators' work, other hidden workers have been produced as the communication channel and processors, they are called, as Sarah Roberts has termed them Commercial Content Moderators (CCM) (Roberts, 2016). 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. In 2018 there are about 7,500 CCM working for Facebook (Koebler and Cox, 2018). As Summers observes, "[p]art 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" (Summers, 2009). One of the first times that Facebook discussed these hidden workers was on the 19th of June 2012 (the link is no longer available), when it revealed on its Safety Page information regarding the processes that happen in the 'back end' of the platform after people report things:

[T]o 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.

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 regards to what they do, what training they go through, what are their work conditions, what kinds of guidelines they receive and so on. To this day it is quite difficult to find

information from Facebook about CCM. As Gillespie argues, “[f]or more than a decade, social media platforms have presented themselves as mere conduits, obscuring and disavowing the content moderation they do” (Gillespie, 2018b). As I show in this book, this has been an ongoing strategy to conceal the decision-making processes conducted at the back-end.

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 American social conventions, but importantly, they are cheap labor.

Social media’s growth into a multibillion dollar industry, and its lasting mainstream appeal, has depended in large part on companies’ ability to police the borders of their user ... companies like Facebook and Twitter rely on an army of workers employed to soak up the worst of humanity in order to protect the rest of us. And there are legions of them—a vast, invisible pool of human labor. (Chen, 2014)

CCMs, as Roberts (2016) argues, are employed by social media platforms to filter problematic content. In order to perform their job function, they have to perform processed listening to people’s behaviors to separate between the signal and noise as categorized by the platforms they work for. According to Chen, there are at least two kinds of content moderators: one, ‘active moderators’, who **filter** posts in real time; and two, ‘reactive moderators’, who only filter if content has been reported by people as offensive. The list of problematic content categories, is a mirror of the community standards: ‘pornography, gore, minors, sexual solicitation, sexual body parts/images, 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 outsourced CCM teams and then go through three filtering processes: one, content can be ‘confirmed’ as offensive, thus erasing it from both people’s account and all of Facebook; two, the content can be ‘unconfirmed’, meaning it is not deemed offensive, and it stays on the platform; or three, ‘escalation’, which means content goes through a higher level of **filtering** by sending it to Facebook’s 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). All of these procedures happen at the back-end, hidden from “normal” users because of the specially designed asymmetric listening architecture.

This is a human cleansing device, or as, one content moderator describes 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). Such decisions 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 machines/algorithms.

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. Facebook's first Abuse Standards document was drafted in 2009. Three years later, Version 6.1 consists of a 17-page manual, and workers are given instructions on how to respond to people's reports, and other kinds of content. Once something is reported (content, people, Pages or behaviors), CCM have to determine the identity of the person by deploying the "name match policy". This means that they need to tune into people's profiles to verify whether the name of the person who reported and the person in the comments/post/image are the same. This processed listening practice is hidden and conducted without the knowledge of ordinary users as they are not signalled through visual or audio cues that someone is tuning into their private space.

CCMs also need to determine the context of the content, whether the intent behind it is humor, insult, solicitation, or political. 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 people are notified, but are given limited information regarding the rationale behind the decision or means to appeal it. 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.

CCMs work in offices that feel like "production line" of factories given that they are expected to process hundreds of reports per hour, as a Facebook content moderator in Germany revealed (Punsmann, 2018). Every aspect of their work is calculated, including their breaks. They 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: 726) shows in relation to micro-workers' task completion speed. 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” (Ibid). 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)

Thus, Facebook hires human processors and provides them with guidelines that create a structured workflow, similar to the way in which algorithms are given instructions. 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.

These human interfaces of machines are supposed to have 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 the rhythmmedia of these media territories will feel ‘organic’ and not interfered with. They are also cheap labor that is replaceable and kept hidden from the subscribers of the service and, at the same time, help to keep its competitive edge over other companies.

Hidden in the back-end of the 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.

There is a decision-making process used by these human communication channels. Their work determines which people and behaviors are 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. These decisions have immense social, cultural, political, and economic implications that are kept hidden and unaccounted for. As Jillian York and Corynne McSherry from the Electronic Frontier Foundation (EFF) argue:

The engineers who designed the platforms we use on a daily basis failed to imagine that one day they would be used by activists to spread word of an uprising... or by state actors to call for genocide. And as pressure from lawmakers and the public to restrict various types of speech—from terrorism to fake news—grows, companies are desperately looking for ways to moderate content at scale. They won't succeed—at least if they care about protecting online expression even half as much as they care about their bottom line. (York and McSherry, 2019)

They outlines four ways which make content moderation problematic: 1) It is a dangerous job but we can't let robots do it instead; 2) It is inconsistent and confusing; 3) It can cause real life harms to both the workers and users (such as censoring LGBTQ+ people and content, calling out racism, and deleting women's health businesses because they are too sexual); 4) Appeals are broken and lack transparency. What guides most of these problems is Facebook's business model which does not always resonate with marginalized groups or society's best interest. Facebook's rhythmedia, the way it orchestrates a certain type of sociality can be noisy to us, because profit is not the value that should be the soundtrack of our societies. Alongside CCM there are other people who tune the algorithms and are kept hidden from society the Feed Quality Panel.

Feed the Panel

Alongside paid content moderators, Facebook also hires people to fill out surveys to gain a better understanding of what people categorize as interesting in their newsfeeds and the reasons behind this. As mentioned above, Facebook frequently sends its unpaid workers—its subscribers—surveys regarding newsfeed functionality. People are neither rewarded for filling out these surveys nor

receive information about the results and what is done with them afterwards, the incentives to complete these surveys are quite low. On August 18, 2014, Facebook began a special project in Knoxville involving 30 paid workers in their 20s and 30s (already indicating whose categorization values are most important) completing surveys to improve the newsfeed. According to Steven Levy (2015), “Facebook has expanded the project to 600 people around the country, working four hours a day from home. Those numbers will soon expand to the thousands” (Levy, 2015). Facebook revealed this group, which it calls the Feed Quality Panel (FQP):

As part of our ongoing effort to improve News Feed, we ask over a thousand people to rate their experience every day and tell us how we can improve the content they see when they check Facebook—we call this our Feed Quality Panel. We also survey tens of thousands of people around the world each day to learn more about how well we’re ranking each person’s feed. We ask people to rate each story from one to five stars in response to the question ‘how much did you want to see this story in your News Feed?’ From this research using a representative sample of people, we are able to better understand which stories people would be interested in seeing near the top of their News Feed even if they choose not to click, like or comment on them—and use this information to make ranking changes. (Zhang and Chen, 2016)

Human filters, as Facebook’s newsfeed managers demonstrate, are paramount to the functioning of Facebook. Algorithms have limited abilities to decipher what is important, context and nuances, and especially what influences users to behave in one way or another. Here Facebook wants to tune in closer and listen to people’s behavior to understand what is the rationale behind their actions to make better categorizations (for 20 and 30 year olds, that is). These efforts do not imply Facebook will change these metrics or reveal the data gathered, as that is a part of the competitive edge they have established with their database—they have centralized their power. ‘Improving’ is a problematic term because it is not clear what it means—improving what? for who? and for what purpose? As shown above, despite people’s actions against various algorithmic or architecture designs, Facebook pushes its own rhythmmedia rationale.

The work of the FQP is very similar to the work people do on Facebook; they have to go to their personal accounts and decide which stories they like on their newsfeed. But, in order to ‘justify’ their salary, they have to do more than that. These workers access a special version of Facebook and are presented with 30 newsfeed stories specifically tailored for their account. Contrary to the ‘normal’

version of Facebook, here, the stories on newsfeed are not ranked, but rather randomly scattered. The raters then have to simulate how they would ‘normally’ engage with the story; ignore it, Comment, Share, Like, or follow the links. After that, they need to answer eight questions to elaborate on how they felt about the story. To finish the story’s feedback, they need to write a paragraph to describe their overall tendencies towards the story (Levy, 2015).

According to Will Oremus (2016), this project was led by Adam Mosseri, Facebook’s VP of newsfeed, who together with his team realized the value in the qualitative input they received from human feedback filters. Therefore, Mosseri expanded the project across the United States and overseas. The FQP is meant to give context and meaning to people’s listening behaviors, it aims to understand what people like without Liking it in the way Facebook offers. It shows that Facebook understands that the standardized metrics and **measurements** are not enough insights to people’s lives, preferences, and desires. This research helps the company to make a better rhythmmedia, meaning ordering things in a way that will lead towards more engagement and less deterrence from ads. This is because the most interesting finding that the FQP revealed was that people do not appreciate ads in their newsfeed:

[T]he testers’ evaluations showed that Facebook still has a long way to go before reaching its stated goal of making sponsored stories (i.e., ads) as welcome and useful as other posts in the News Feed. ‘It’s as expected,’ says Eulenstein. ‘In general, commercial content is less desirable than other forms of content’.
(Levy, 2015)

Eulenstein’s statement is important because it reveals that not all findings from such surveys are taken into account. Crucially, this indicates that Facebook *knows* that people do not like ads on their newsfeed. However, since people’s wishes clash with its business model, then their opinions about ads matter only in the sense of Facebook’s decision to produce ad content in less intrusive ways. Facebook will train people through various algorithmic and architecture design, as well as some help from CCMs, to change their behaviors in relation to advertisements. This could be a reason why the results of such surveys are never published or open to the public. These surveys, then, try to have a better understanding of the kinds of story people prefer and order, to give more context to their listening practices to know how to better shape, phrase, present and embed ads as ‘organic’ stories. Importantly, it helps Facebook link, order, and **filter** people and things in particular spaces and times towards more engagement and less intrusive ads.

Conclusion: Filing the Rhythms of Anti-Sociality

Of this book, this chapter was the most difficult to write. At the moment of final.final.final2019.doc editing of the chapter, in April 2019, there have been at least two scandals published on Facebook each week. It is tempting to include all of them, because each one reveals a different aspect of the mammoth that it has become. This week's highlights were the fact that Facebook “‘unintentionally’ uploading the address books of 1.5 million users without consent, and says it will delete the collected data and notify those affected” (Hern, 2019), as well as a leak of internal documents from Facebook between 2011 and 2015 which indicated the company wanted to sell access people's data. In this latter case the interesting revelation was something that internet researchers have been pointing for more than a decade: Facebook says one thing and does another. In particular, the article showed the PR strategy of the company, to divert the design changes narrative and frame it around user trust, not competition or making more profit:

Where privacy is mentioned, it is often in the context of how Facebook can use it as a public relations strategy to soften the blow of the sweeping changes to developers' access to user data. The documents include several examples suggesting that these changes were designed to cement Facebook's power in the marketplace, not to protect users. (Solon and Farivar, 2019)

Similar to the previous chapter, ‘control’, ‘safety’, and ‘trust’ are used against people, not for them. Facebook is taking care for its own financial control and safety—to create trust among people and make profit on their data. Importantly, just like the digital advertising industry did in the previous chapter, Facebook wants to position itself as a key player in the digital territory. As much as these leaked documents and many others before them, I wanted to publish this book and needed to put a pin in my own interests and need to consume as much information as possible about Facebook's scandals—even if it was overwhelming and a challenge for an information junkie such as myself.

No matter how much Facebook fucks up, and it does so spectacularly, people still use it. Some people thought that after the Cambridge Analytica/Brexit scandal people would #DeleteFacebook, but many are still using it. As I mention at the introduction, it does not matter if it's Facebook, or Google, Amazon or, Microsoft. Before these companies we had IBM, Netscape, MySpace and of course—Bell Company. What is important in this chapter is showing how similar strategies were deployed on people to shape their behaviors towards a desired type of sociality that yield more profit. It is about amplifying such strategies, that

nothing is naturally ordered, and understanding that things can be different, we need to demand a different rhythm of sociality.

In this chapter, I focus on the four filtering mechanisms that Facebook enacts simultaneously to shape a specific sociality with rhythmmedia. The main participants in Facebook's multiple communication channels are Facebook itself (including its architecture, algorithms, and social plugins), the service affiliates and advertising partners, websites, applications, games, content moderators, feed quality panel and, lastly, its subscribers. Facebook's strategy is to maintain the equilibrium of its multi-layered communication channels through **filtering** what it considers to be the appropriate way to behave. The filtering mechanisms consist of four main mechanisms, two non-human, which are its architecture design and algorithms, and two human, which are its low paid workers and, most importantly, its subscribers. All of the elements inform each other in a recursive feedback loop in which rhythmmedia is conducted by Facebook and resonates in different capacities and intensities.

The first part of the chapter showed the way that Facebook **restructures its territory** in specific ways to influence and change people's behaviors to yield more engagement and thus more value to the service. With the audience selector, the company tries to encourage people to feel as though they can control who can see their posts and, by doing so, persuade them to share more content. The Sponsored Stories feature is intended to influence people's friends to engage with brands. They do that by producing users into communication channels and monetizing their relations with their friends. Such architecture designs are intended to influence people to behave and influence their peers in various ways, which, as Facebook researchers show, is the main purpose of the platform. Here, Foucault's notions of power enacted on actions, and specifically on people's relations, is put into action.

The most influential architecture feature are social plugins, which are an improved version of digital advertisements' cookies combined with pixels, which processed listen to people's behavior outside the territory, wherever a website, game, application or other publisher integrates these tools. Social plugins listen to Facebook members *and* non-members whether or not they are logged in to create a database of behaviors. Here, Facebook develops the ad network technology and turns the platform into a place where people can perform their everyday lives and, at the same time, stretches its tentacles through cookies and pixels across the whole internet. Whereas in Chapter 4 these channels were relatively decentralized between publishers, advertising networks and advertising exchanges, in this chapter, Facebook introduces a recentralisation of the communication channels to and from its territory.

In doing so, Facebook provides **licenses** to the advertising industry to use its **measuring** tools and units and gives controlled listening capacities to them. It also allows advertisers to conduct small-scale research on subscribers but forbids companies from producing data subjects from the platform's data. Facebook also provides itself with a license to act in ways that, when conducted by others, are deemed illegitimate. In this way, Facebook operates as an advertising association, dictating how ads should be designed, measured and even what kind of text and images they should have. By doing so, Facebook orchestrates the way that people and their interactions are **filtered** through the web. Facebook becomes a central node for a knowledge database that produces subjects according to its business model.

Behavior is extremely important to the production of data subjects, because knowing when and where people do things enables Facebook to predict what the 'estimated action rates' are, which is an important factor in its ad auction bidding. Listening to behaviors is also important in statistically analysing the normal behaviors of people, which can help in identifying when there is an abnormal rhythm. As Foucault argues, statistics are harnessed for knowing a population and managing deviant phenomena. This is done with Facebook's FIS algorithm, which categorizes behaviors to create a normality curve that can assist the service in detecting what it defines as abnormal behavior. This curve is constantly changing according to Facebook's business model and what kinds of behaviors it perceives as being able to harm its value.

As shown above, the three main spam-related activities, according to Facebook's researchers, include fake profiles, creepers and compromised accounts. All these activities are categorized as spam because they can create multiple/inauthentic profiles of people or undisciplined subjects who can distort the accurate knowledge production, which can harm Facebook's business model. The main characteristics of such 'spammy' behaviors' are having the same behavioral pattern and volume, which means that their rhythms are identical and thus easier to spot as irregular. In this way, and similar to the digital advertising industry's metric web standardization, the boundary between the healthy and human body and the problematic and robotic one is enacted. But such definitions are constantly changing and the 'right' rhythmmedia is always in process of production.

However, it is important to keep in mind that Facebook's measurements and enforcement are not always working. As Jonathan Albright, the Director of Tow research center at Columbia University, shows in a series of articles called the "Micro-Propaganda Machine"—some Pages have managed to skew metrics and at the same time Facebook did not suspend or remove problematic Pages. As he

argues “exploiting the platform’s measurement features and post-engagement metrics—behaviors that seem to have resulted in the inflation of the numbers of likes, shares, and video views reported by these pages” (Albright, 2018). This pattern of lack of proper enforcement of its rules when it comes to Pages and actors who have exploited its platform is not a coincident. Engagement, whether it is disinformation, hate, racism or sexism brings profit, and for Facebook that is the main value. ‘Authenticity’ of behavior is only spammy when it harms the business model and brand reputation, therefore as Albright points, Facebook only removed problematic Pages after it was sued for inflating metrics in October 2018 (Welch, 2018).

The human **filters** who are in charge of removing problematic things on Facebook are also employed by the company but operate as silent processors. This is an architecture design chosen so that people will think that this is the ‘organic’ way the algorithms operate; A real-time experience. In this way, Facebook avoids being accountable for the decision-making processes these workers make on its behalf. The first type of workers are content moderators, who remove content that has been reported by people or that is forbidden according to guidelines that Facebook gives such employees. These workers are usually low waged and have to operate within seconds, making their behavior as similar to algorithms as possible. Their rhythm, like that of the telephone operators, must be fast and efficient, machine-like.

Such experiences of immediacy, selling ‘real-time’, are exactly the reason why content moderators are not celebrated as a branding device like the telephone operators. However, CCMs keep social media’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 and Cox, 2018). 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.

Content moderators work in ‘factories’ which can be located either in people’s homes (if they are Mechanical Turks) or in special centers in Asia where many workers are cramped in small cubicles and cannot talk with one another. Their work feels ‘alienating’ (as mentioned above by one moderator) by the interface design which similar to the telephone operators *and* the people who use these services – are ordered in individualized ways. This is meant to **de-politicize** them, to prevent their workers, whether they are the free labor users or low waged content moderators, from organizing and unionizing. In this way, personalization is a powerful strategy to **restructure the territory** in order to un-crowd people from political discussion, thought and action.

The other workers are known as the Feed Quality Panel, and they are meant to provide more meaningful input about people's behavior. By doing so, they help Facebook expand its listening capacities and learn how to modify different design and algorithmic features to push as many advertisements as possible without irritating users. People, then, are paramount to the functioning of Facebook because the service cannot count solely on algorithms and architecture design in order to operate its medium.

The last filtering machine are people themselves, who are reproduced into several data subjects, most of the time without their knowledge, including the sender, receiver, producer, message, communication channel and, most importantly, the **filter**. Therefore, they must be **trained** to behave according to Facebook's conception of the correct behavior and to use the tools Facebook provides for their 'intended use', as they say. People are also meant to understand their relations according to Facebook's measuring units, which the platform hopes will encourage them to participate more.

At the same time, Facebook also encourages listening actions that do not receive visible cues since these give more information to the platform about how to **restructure the territory** to yield more value. People are the most valuable asset here, as they train the newsfeed algorithm to be more tailored to their interests with every like, survey completed, and reporting of uninteresting topics. However, it is important to note that, although people's feedback (loops) are important for the development of Facebook as a multi-layered communication medium, including its algorithms and architecture, their feedback will only be taken into account if it is part of the Facebook business model.

Importantly, the way Facebook's territory is ordered is not only influenced by algorithms but also by the users, 'shadow users', Facebook's product managers, sites that embed social plugins, spammers, journalists, legislators, Facebook's affiliates and, potentially, other actors. It involves both human and non-human actors. The weight, relevance and impact of each of these actors can change and mutate according to various reasons and conditions, but not only because of a change to the newsfeed algorithm. Giving more weight to the agency of algorithms takes the agency away from humans, outsourced workers, material and immaterial constellations, changing business models and deals, and the complex processes between all of these.

Concealing the rhythmmedia considerations helps avoid questions around how this ordering affects the way people understand their subjectivities, politics, news and other topics and how they can behave in these territories. For example, in 2015 (Eulenstein and Scissors, 2015) and 2016 (Backstrom, 2016) Facebook

made algorithmic tweaks to prioritize engagements with friends and family, which has significantly decreased people's interactions with credible news outlets. According to Jennifer Grygiel, this rhythmmedia may have shaped people's opinions and voting behavior in the 2016 USA election (Grygiel, 2019). As more platforms come under government scrutiny and questioning, understanding, and revealing rhythmmedia practices can help citizens demand regulation and change for the way such companies order people's mediated experiences. People should be able to decide what rhythms they want, because being social goes beyond the individual—It's not personal.

Notes

1. Free labour in the context of new media is a concept that has been developed by Tiziana Terranova (2000). Coining the term even before platforms appeared and exacerbated this work 'opportunity', Terranova managed to capture the way people work in digital environments voluntarily, for free, while feeling enjoyment and being exploited.
2. Veritasium is an educational science YouTube channel, created by Derek Muller in 2011.
3. Conversion in advertising means that the user has performed some kind of action that was desired/requested by the advertiser, usually visiting the external website linked to the ad; i.e. the advertiser has managed to 'convert' the behavior of the user due to the ad.
4. Compromised accounts 'are accounts where the legitimate owner has lost complete or partial control of their credentials to an attacker. The attacker can be a phisher either automated or human, or a malware agent of some form' (Stein et al., 2011: 3).

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Conclusion: Transducing the Deviant

If you have reached this part of the book you probably know by now that spam is not just that junk folder in your email account. As I showed throughout the chapters, spam is much more than Nigerian princes or Monty Python's (excellent) sketch. More than that, investigating 'deviant' media categories can tell us a lot about media. As Michel Foucault argues, if we want to "find out what our society means by sanity, perhaps we should investigate what is happening in the field of insanity. And what we mean by legality in the field of illegality" (Foucault, 1982: 780). These *Media Distortions*, these deviant behaviors and these irregularities, were exactly what I was questioning, challenging and re-telling. To make a sense from the common-sense.

As I am writing this chapter, a new wave of research interest is sparking. It examines disconnections, antisocial behaviors, and lack of access to media companies' databases. Scholars from media studies are starting ask what do media and the types of access they allow enable or restrict our understanding of them? What types of antisocial behaviors are media companies trying to filter out and why? This is a big step forward, because it acknowledges our limitation as researchers and amplifies the importance of types of behavior which might not get registered or receive any kind of cue. Deviance matters. It encourages us to think and examine beyond what is available to us, to listen deeper through the mediated layers

of our lives. Interestingly, still, questions around spam are not raised. Spam is still not interesting or relevant to scholars.

Addressing these concerns, Robert Gehl's latest book (2018) dug deeper into the Dark Web to explore the power of constructing legitimacy. Similar to this book, Gehl shows many similarities between the Dark Web and what he calls the 'Clear Web', the 'normal' web that most people use. As he argues "the connotation of 'darkness' in Dark Web has more to do with encryption, anonymization, and leaving standard communication channels" (Gehl, 2018: 6). As Gehl shows, the difference between the 'Dark' and 'Clear' web are not around any black magic or blasphemy that happens in one as opposed to the other. In fact, these media have much more in common than people think, and the same activities happen in both. The difference is mainly about the way to access and use these different mediated territories, and the anonymity of both people and the websites. Hence, what stands behind the 'darkness' is alternative ways of communicating through similar media infrastructures.

Media Distortions shows there are always other ways to develop, engage and understand media. What I show throughout this book is the power behind forcing you to listen to the same record over and over again, making you believe there is one way to experience media. The people and organizations that continuously create the distinction between categories, between what is deviant and what is not—is my focus. It is the way they negotiate, lobby, have conflict with, and establish these deviant categories and what are the consequences of that. Deviant media categories are about the struggles to determine what is human, normal, and social—It is about what makes us as individuals and society, it is about the default settings of our lives.

Because deviant categories constantly change, it might well be that in a few years from now spam will be something else, like the new stream of research around 'fake news' and mis- and dis-information or maybe other problematic behaviors in media that will emerge. And they will emerge. So what is important to take from this? Why is it important to examine spam or any other types of deviant media? The answer is, as I showed throughout this book—power. Who has the power to decide and enact what will be categorized as deviant? What is the rationale behind it? How are these boundaries negotiated? How do these categories influence people's behaviors, feelings, preferences and tastes? How do these categories affect what we consider as human? How do these categories produce new territories? And how do these deviant categories shape how sociality is understood and performed?

These are important questions because they shape the way we understand and engage with media and ultimately ourselves and our surroundings. It means that if I think that making many actions at the same time is spam, and hence prohibited, then I might not choose to act like that, even though this type of action can be quite useful for protest and self-determination. For example, in 1998 The Electronic Disturbance Theater (EDT), an Internet performance art activist group, used a website called FloodNet (developed by Brett Stalbaum and Carmin Karasic) for collective digital protest and artistic expression (Carasic, nd). The EDT's aim was to use internet technology as a collective activist tool for non-violent resistance. They wanted to act in solidarity with the Zapatista rebels residing in Mexico by staging virtual sit-ins online. Inspired by street theater and political rallies FloodNet would reload a URL for short several times, and in doing so would slow the website and network server down. Such disruptive activities would be later called spamming, hacking and especially Distributed Denial of Service (DDOS) 'attack' because they would disrupt the fast-pace rhythm of 'real-time' digital experience. Categories change, and so do their meanings, but our need to question, protest and negotiate how they are produced is fundamental to our political futures.

For example, in a recent research conducted by Nathan Matias and others at Princeton University in the United States (2018), they examined how Facebook categorizes ads. As they argue "Facebook detects political ads through machine learning algorithms and human reviewers". As they show, there are a lot of conflicts between two main categories—political and issue advertisements—especially around election time. But one of the main issues is that because the biggest tech companies are based in America, their policies are shaped by these tech companies' legal definitions and are regulated by the Federal Election Commission (FEC). So while there is a clear definition for political ads, 'issue ads' are harder to define and ads about disabled veterans and national parks were prohibited. As Matias and colleagues argue:

If corporate political filters make enough mistakes, they could substantially impact American civic life. Public holidays, community centers, and news conversations knit together the civic fabric of democratic life, enabling Americans to understand each other and work together despite our differences. Each time a platform wrongly restricts a community announcement, this civic fabric weakens, with fewer people honoring American veterans, fewer relationships among neighbors, and less common understanding at a time of growing polarization. (Matias et al., 2018)

As Matias et al. argue, by reviewing so many advertisements platforms become policy enforcement of society's norms and values, and when their main logic is profit, (according to Statista website, Facebook's 2019 ad revenue is more than 69 billion dollars) this is a problem. As I showed in Chapter 4, not having a clear definition of spam was a powerful tool for the advertising industry. It enabled them to categorize anything that interfered with their business model as spam. And this is precisely why researching these topics is important. It is important because decisions of categorization and their operationalization affect our everyday lives. And by not revealing some of the decision-making processes of content moderators and other moderators of ads and content on these platforms we simply cannot know the amount of filtering our mediated experience goes through.

The Power of Sound

This book shows the ways media practitioners construct specific behaviors as deviant in different periods and territories and what that means. Unlike many scholars from the history of science and media and communication I use sound concepts to theorize and conceptualize power relations in media rather than vision, (in)visibility, and seeing. Two main theoretical and analytical tools guided *Media Distortions*: processed listening and rhythmmedia. These sound concepts, I argue, are more suitable when examining media knowledge production and power relations, because of their abilities to cross boundaries (of bodies and spaces).

As 'deviant' media receive different categories and configurations in different periods and media, I outline broad strategies that show how power has been enacted. These broader strategies show longer lineages of 'new' media phenomena, while emphasizing the local adaptations such strategies take. This book's main argument is that media practitioners in different periods have been using processed listening and rhythmmedia as part of seven sonic epistemological strategies to (re)produce subjects and territories. The first three strategies are associated with *processed listening*: **new experts**, **licensing** and **measurement**; the next four strategies are related to *rhythmmedia*: **training of the body**, **restructuring territories**, **filtering**, and **de-politicising**. Through the three distortion stories, I illustrate how these strategies have been deployed in different ways and degrees to show how power is put into action, as Foucault would phrase it (1982: 788). I demonstrate how such power came into action by restructuring territories and training people to become specific subjects.

Although Foucault never talked about media or lived to experience how networked territories such as the internet, the web, and social media platforms developed, his theory of governmentality and the axis of power/knowledge have been influential for this book. As the chapters in this book have chronologically progressed, the power of states was gradually delegated to commercial actors and especially media companies to produce knowledge about populations. This is not to say that states have stopped producing knowledge or lack power, but rather that the power of media companies can be stronger and have more capacities. In a way, media companies and states are not separate entities, because more and more collaborations are conducted between governments and private companies as more state responsibilities get privatized.

One just needs to listen to the way companies like Google, Facebook, and Amazon have become gateways to almost every activity we do, from searching information, to watching videos, listening to music, paying for things, connecting with employers, finding romantic or sex partners, keeping in contact or fighting with family and politicians, shopping and maintaining our mental and physical health. As our primary mediators of life, it is important to remember that Facebook and Google's main business model is advertising, while Amazon recently announced that it will also join the party: "Thanks to its wealth of data and analytics on consumer shopping habits, it can put ads in front of people when they are more likely to be hunting for specific products and to welcome them as suggestions rather than see them as intrusions" (Creswell, 2018). What these companies don't advertise is how they turn people into the product, that is kept silent.

Therefore, the way these platforms shape the kind of things we can interact with and consequently our subjectivities, our relations and our understanding of the world—should be challenged, questioned and examined. It is not only about what is spam, then, it is about what is filtered, (re)shaped, managed, (re)ordered through media. It is about the power these media companies have on every aspect of our lives, and even deaths.¹

Unlike several streams of actor network theory who argue that all elements have equal weight in a network, and following Raymond Williams, I believe that it is important to amplify the intentions behind media companies strategies. I show the entities—people or otherwise—have been conducting rhythmmedia and show that there are organizations who are responsible for designing, managing, shaping, and using different strategies to create specific subjects. I do not believe any research is neutral or objective from politics, and I can definitely say that this current book takes a stand. As a researcher, but more importantly as a feminist and digital rights advocate, I do not intend to reproduce a soundtrack that suits

big media companies. ‘Tech won’t save us – Unionize’, is not just a cool t-shirt slogan. It is the argument that guides this book.

Spam is political because a lot of behaviors women (such as breastfeeding), LGBTQ+ (using names that were not given by birth) and people of color (Harlem house parties) perform are often categorized as inauthentic, noisy, and spammy according to media companies. Categorizing such actions through processed listening and shaping different territory architectures in a particular rhythmmedia then, has been designed to produce subjects that are in congruent with a standard that is not their own. Importantly—it aims to discourage and de-politicize their actions, gatherings and expressions. The boundaries of what can be done, said, thought and embodied has been a constant battle for redefining the meanings of our lives. Nevertheless, we must persist to resist.

This book shows how power has been enacted by actions deployed on actions in media, whether through modifying (physical or digital) territories to influence people’s behaviors, or through actions on people’s behaviors or their friends’ behaviors, in the present with an ambition to influence their future actions. In each of these stories, I show how power relations have been enacted in a process that was co-produced by human and non-humans and conducted by a rhythmmedia that mostly benefited particular actors. Conducting rhythmmedia shapes people’s behaviors by repetitive training of individual bodies and populations as a whole. This rhythm is far from being neutral, and understanding this means that we can also change the tune into a melody that makes sense to us.

Using sound concepts has been productive, especially in relation to multi-layered communication channel territories such as the web and Facebook. As I show in Chapters 4 and 5, in only two decades, the number of communication channels that have been developed and are operating in a new territory has increased immensely. There are multiple spaces operating simultaneously, conducted in different rhythms, and importantly—unregulated at the ‘back-end’. With Amazon’s Alexa, for example, the company’s listening capacities expand even further and add more layers where it can conduct processed listening to our behaviors and voices inside our homes, even if we are not using the phone or any other media device.

Both processed listening and rhythmmedia are constantly feeding each other with knowledge that (re)produces subjects and the territories in which they live. In this way, they are never finished subjects or territories. This is precisely why spam has been perceived as noise in the past and why cookies were not considered spam in the 2000s, because, in each setting, the conditions changed along with different politics that came into place.

Creating a Dynamic Database with Processed Listening

Processed listening involves monitoring, measuring, categorizing, recording and archiving to produce a dynamic knowledge database. Each of these actions already produces, shapes, includes and excludes certain types of subject. Having more listening capacities gives you more power to penetrate more mediated layers and know more about people's behaviors in different times and spaces. It creates a dynamic database/archive because there is a continuous process of listening, which adds more knowledge to create profiles and audiences. Remember *Ghost in the Shell's* Puppet Master? As they argue in the film: "Man is an individual only because of his intangible memory. But memory cannot be defined, yet it defines mankind". The creation of this database/archive produced a memory that media companies have of you, to produce the options available to define you. But you don't have access or knowledge about it.

Processed listening involves strategies of **new experts**, **licensing** and **measurement** to create a database that can then be used for rhythmmedia. In Chapter 3, I show how in 1929, Bell listened to people in multiple spaces across New York City, using the tools it developed—the audiometer and the noise meter—and with its measuring unit—decibel. **Licensed** by the Noise Abatement Commission (NAC), Bell became the **new experts**. The company's media practitioners were able to measure, categorize and decide what the thresholds were for the normal, healthy *and* human, by defining anything that interfered with its business as noisy. Bell was joined by other interest groups from the NAC, but all of them relied on Bell's metrics to categorize behaviors and spaces that interfered with their business or values as noisy.

The dynamic database Bell produced enabled it to reconfigure specific groups of people, behaviors and spaces so that the city of New York would be produced as a territory that suited Bell and the NAC's goals. These goals included pushing the telephone apparatus and the services it provided. Importantly, the NAC project that was promoted across the city and media outlets standardized the way people thought and understood sociality according to Bell's measuring unit. This reoccurred in Chapter 5 with Facebook and its standardized unit, the Like. The 'Like' has become a way to describe popularity, desirability, attention, affection and a way to show you are a good 'friend'. The production of knowledge in these cases, then, was not only production of the measuring tools, units and the drawing of noise maps; it also reproduced people as subjects who experienced, understood and performed their lives according to Bell and Facebook's standards.

A second strategy was the surveys that New York City newspapers circulated to educate people into understanding their relations with other people and objects according to Bell's rationale. They also enabled the NAC to give controlled listening capacities to the city's citizens so they could be trained and 'empowered' to identify noisy behaviors. People in New York did not have Bell's measuring devices so they could not measure and provide exact units. This did not matter so much as to train them that they should care about noise and to define and perform their relations according to the decibel. This shows how controlled listening capacities were also given to 'normal people' in a disciplinary mode that **trained their bodies** to become disciplined subjects. It also encouraged people to educate their peers by policing the noisy people (who were mostly foreign or black) or informing the authorities about them—deviant behaviors should be controlled and managed all the time. Ultimately, both the NAC and Facebook have used only survey findings that suit their rationales, while ignoring others.

When it came to Bell's operators, the company expanded its listening capacities, they penetrated into more spaces trying to measure and record as much data as they could into a database. As Chapter 3 showed, Bell listened to its operators inside *and* outside their work hours and also inside *and* outside their workspaces. Bell stretched its listening capacities to be able to collect as much information as possible about the operators' lives, activities, preferences, body and hygiene habits and desires. With the *Design for Living* program, the boundaries of operators' bodies, time and minds were re-drawn by Bell, and molded like objects. By organizing group meetings to talk about topics such as etiquette, money management, travel and hobbies, Bell wanted to create a specific default design for the operators' lives. The company did this to gain more knowledge about their behaviors, desires and thoughts so they could be trained as more efficient and obedient communication channels and **filters**. The operators were an important element in the system which made sure people would experience a 'real-time' communication with no interferences. But as they were supposed to decrease interferences, Bell made sure to interfere as much as possible in their lives.

The two events in Chapter 3, I argue, provided inspiration for Claude Shannon's information theory and cybernetics' conceptualization of noise and, importantly, automation. In both of these events, Bell's engineers were the **new experts** who could operate the listening devices, measure people and spaces, and have the authority to categorize noisy behaviors or spaces. Operators were trained to detect malfunctions and understand what customers were saying, sooth their anger, filter noise from the signal, and predict future behaviors while applying their memory. They were part of the communication channel *and* its **filter**.

Importantly, as they were able to fix the apparatus, like engineers, another key characteristic the operators embodied was the 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.

The more knowledge media practitioners produced, the more they could turn it into various types of product and service. These procedures were later delegated, partly, to automatic machines, which accelerated the listening process and thus the ability to produce subjects and territories. An automation also meant that it was easier to conceal the people, values and decisions that are still involved in these processes. What these stories show is the way that listening to people in multiple spaces can produce more knowledge about them, and this in turn can feed various business models. Hence, the development of more layers of communication channels that are described in Chapters 3 and 4 have been inspired by this intrusion to people's lives, inside and outside work, as well as their bodies and minds, and got more digital. The more layers that were added, the more aspects of life that were listened to and then monetized.

The early establishment of regimes of noise is then compared to the advanced electronic networks of the 21st century, where one of the main media territories that continues this project of automation is the web, which is elaborated in Chapter 4. Around the 2000s, the number of media practitioners that deployed processed listening increased and power relation were decentralized to involve more actors. Here, we tune into to the involvement of the advertising industry and its various types of actors such as advertising associations (IAB, EASA, FEDMA), advertising companies, advertising networks, advertising exchanges, Supply-Side Platforms (SSP) and Demand-Side Platform (DSP).

These media practitioners were **licensed** by the European Commission's soft law approach to be the **new experts** that could listen to people across multiple spaces on the internet and the web. These multiple practitioners conduct an automated online market that facilitates multi-layered communication channels. This online market territory was created following the transition in business models of the web from subscription to free access to services. With this shift, the digital advertising industry became the main sponsors of the web and therefore became key players of this territory and gained more power with their ability to listen and produce knowledge (profiles and audiences). Other actors such as web browsers and publishers were also **licensed** to listen as they provided the territories and **measuring** tools to conduct most of these practices. Today these licenses are given through voluntary 'self-regulation' mechanisms to technology companies

who along with academics and governments create multiple ‘ethics’ guidelines, principles and statements for artificial intelligence as a way to avoid actual regulation. (You can check the Algorithmic Watch AI Ethics Global Inventory to understand the scope: <https://algorithmwatch.org/en/project/ai-ethics-guidelines-global-inventory/>).

Chapter 4 shows how the penetrating to people’s private spaces—their bodies—by tracking, monitoring, and monetizing on their every move has been normalized. The advertising industry practices enable them to dis-embody people by treating them like objects, and by doing so de-humanize them. Both digital advertisers and others who work in the technology industry do not understand or want to understand the harms that their processed listening practices create because they think this is a sort of abstraction, just data objects rather than people. But as Chris Gilliard argues:

Privacy for marginalized populations has never been, and will never be an abstract. Being surveilled, whether by private actors, or the state, is often the gateway to very tangible harms—violence in the form of police brutality, incarceration, or deportation. And there can be more subliminal, insidious impacts, too... The norm-shifting involved around privacy works to benefit tech companies who profit immensely from labelling extraction as “sharing” and “community”. (Gilliard, 2019)

It is exactly the normalization of ‘extraction’ through media that this book aims to reveal. To know people on the web, the digital advertising industry standardized web metrics, including listening tools such as first- and third-party cookies, pixels and log files as well as measurement units such clicks, unique visitors and page impressions. Various practitioners from the advertising industry listened to individual bodies that were associated with their IP addresses through cookies and pixels. They also listened to them as populations in multiple spaces across the web to collect information about their preferences, behaviors and habits.

People’s behavioral traits were divided into groups according to gender, age, location, interests, marital status, health status and other characteristics. This knowledge was used to match them to particular profiles according to audience segmentation. These classifications of populations were then fed back to them by shaping the architecture and things according to pre-defined profiles. Although these data are never an accurate depiction of people’s personality or traits, and in fact because of this, the power media companies have in shaping the options available to people in mediated spaces is dangerous. As Foucault argues in relation

to governmentality, such strategies will “act either directly through large-scale campaigns, or indirectly through techniques that will make possible, without the full awareness of people ... the directing of the flow of population into certain regions and activities” (Foucault, 1991: 100). In this way, the digital advertising industry produced ways of living.

A recent example of this is the Cambridge Analytica case. As part of Donald Trump’s election campaign in 2016, Project Alamo was particularly special. As Jamie Bartlett shows in his two-piece documentary for BBC2—*The Secrets of Silicon Valley*—Trump’s campaign team used Facebook to target specific groups of people, according to their traits and then tailor specific ads for them. “It wasn’t uncommon to have 35 to 45 thousands of these types of ads everyday”, said Theresa Hong, the Digital Content Director of Donald Trump’s Project Alamo. Cambridge Analytica targeted people according to ‘universes’, audience segments that were informed by things like: when was the last time people voted, who did they vote for, what type of car do they drive, and importantly—what kinds of things do they look at when on the internet. They also examined things like emotional and personality traits such as whether people are introverts, fearful or positive.

Cambridge Analytica developed their own archive, combining various databases from Facebook and others to create rich profiles and then tailor election ads aiming to influence the most vulnerable audiences. The company was also able to constantly monitor the effectiveness of its messaging on people, giving them a constant feedback on engagements. This in turn, would enable them to constantly update and improve different messages to different people’s profiles. By knowing people’s behaviors, the company also knew *when* was the ‘right’ time to show them these messages for maximum influence. It is difficult and probably impossible to know the impact of these messages on the people they showed, but nevertheless the intentions and shaping of territory in specific ways is something that they have continuously conducted. And they were not the only ones.

Listening to people as a population, as I showed in Chapter 4, also helped the advertising industry to statistically map behavior online and then draw the boundary of which behavior should be categorized as human and robotic. In this way, they decided how and which bodies count. The more knowledge they had on people’s behavior, the more they were able to categorize behaviors that did not suit their business model as robotic or spammy. Doing this, they were able to redraw the boundaries of what it meant to be human and ‘healthy’—a ‘self’ in the EU online territory, as computer scientists Forrest and Beauchemin (2007) would call it.

The listening ‘event’ never finishes because Facebook needs to keep selling people as products in its online market. This is why as I show in Chapter 5,

listening is conducted even when people log off, and even when they have not subscribed to the service at all. What people do outside of Facebook is valuable data and the company considers every person as a potential subscriber, soon to join. It is important to emphasize, though, that measurement is never quite accurate. On October 17, 2018, it was reported that Facebook hid inflated ad metrics from 2015 until 2016 (Rosenblatt, 2018). In fact, Facebook has a notorious reputation of skewing metrics, unsurprisingly mostly to its own advantage. So although I talk about the importance of accuracy in measurement, in practicality this is pretty difficult to achieve. Measurements of audiences has always been a difficult task, and the digital advertising industry managed to sell this fake dream of accurate profiles and audiences even though they could never properly prove it. In fact, they justify their methods and lack of accuracy by saying that *more* surveillance would help achieve better profiling.

All the chapters show that processed listening was conducted to produce a dynamic database/archive. This is created by measuring, categorizing, recording and archiving behaviors and relations. This is an ongoing process because, to use the database for monetization, it needs to be as large and updated as possible. Power is enacted in each of these stages, from the type of **measuring** devices and who can operate and infer them, to the units of measurement and deciding what to categorize and count, and onto what is archived in the database and who can access and analyze that knowledge, and importantly – for what purposes.

As danah boyd and Kate Crawford mention in regards to big data practices, this is “a new way to claim the status of quantitative science and objective method. It makes many more social spaces quantifiable. In reality, working with Big Data is still subjective, and what it quantifies does not necessarily have a closer claim on objective truth” (boyd and Crawford, 2012: 667). In this way, people are taken out of context and understood as data points to be assembled and reassembled, under a neo-liberal market-driven logic that has profit as its main value. When the media practitioners discussed in the three stories gain knowledge about people and territories, they are able to temporally and spatially reorder them in a rhythmmedia that benefits their business.

Deviant Order: How Rhythmmedia Orchestrates Sociality

Rhythmmedia has been enacted in all three stories in different ways, and it serves several purposes: one, **restructuring the territory** in a way that promotes a rhythm

that increases value (and hence profit) for media companies; two, **filtering** out advertising practices that do not suit the dominant experts; three, producing specific temporalities (speed and frequencies of actions, prioritising specific times of the day/week/year, reordering and stretching work/leisure time) that benefit the media company in terms of efficiency and more value; four, preventing political gatherings by un-crowding, **de-politicizing** them; five, expanding listening capacities to gain more knowledge about people; and, importantly, six, reproducing people into particular subjects by **training their bodies** with repetitious actions. Rhythmedia means reconfiguring anything that interferes, harms, burdens their business as deviant, noise or spam.

In Chapter 3, I show how rhythmedia was conducted by filtering street commerce and Black American's behaviors to have a different street rhythm, one that promoted big retail shopping centres. In New York, Black American's behaviors were also listened to and defined as noisy by Bell and the NAC. Black Americans in Harlem challenged the spatial and temporal ordering of the white locals; their subjectivities and actions were produced as noisy and distorted the white order of life. They were holding loud parties during the night, and placing loudspeakers on the windows of their houses, thus redrawing the boundaries of night and day, and private and public spaces. Their behavior was constructed as noise, a threat to other bodies and minds, to the healthy rhythm of people in the city.

At the same time because they were framed as noise it was easier to police them as they were monitored through the (processed) listening of authorities and citizens through the layers of the cityscape. Categorizing such activities as noise helped Bell to sell the telephone and its services by restructuring the streets to serve its own service and interests. This was achieved by pushing retail stores that were using the telephone to sell their products, which helped to promote Bell by advertising the telephone as a necessary apparatus for shopping.

Specific rhythms were more valuable, and bodies were (re)shaped accordingly through repetitive training. The telephone operators' rhythm had to be as fast as machines to be efficient and make more money for the company. Bell listened to the operators' bodies, broke their actions into smaller segments and then reordered them to become more efficient communication channels to maintain the real-time experience while simultaneously filtering interferences that harmed this feeling of immediacy. It trained their bodies in terms of their diet, how, when and at what pace they should move in the workplace, what they should wear and how they should speak. Bell also intervened in the operators' leisure time, defining what they should read, their 'social norms', how they should spend their money and so on. Listening to its operators, Bell measured, categorized, recorded

and archived everything it could about them, in order to restructure them into more efficient and obedient objects.

Listening to the operators, foreign street commerce traders and Black-Americans in Harlem were conducted both on individual bodies, but also, more broadly, on groups of people such as peddlers, and, importantly, workers unions. These populations' behaviors interfered with the economic goals of Bell, retail stores, real estate agents and others from the NAC. Their rhythms did not bring value to these interest groups and, therefore, had to be controlled, filtered out and, hopefully, eliminated. With both New York City's infrastructure and the operators, another goal was to circumvent political gatherings of unions, and the aim was to un-crowd them. In this way, bodies and territories were reconfigured; they silenced disturbing rhythms.

In Chapter 4, I discuss the database created by digital advertisers, which produces profiles and audiences, transforming them into commodities that are traded in 'real-time bidding' (RTB). Here, advertisers construct their own 'real-time' in the new online market territory, in which individuals, audiences (population segments) and spaces are traded within milliseconds to the advertisers who offer the most money. With rhythmmedia, every rhythm has a value. Commercial rhythms are constructed and promoted, and become the main engine that (re) produces new notions of time, subjectivities and territories,—All orchestrated at the back-end. Here, I illustrate how real-time transactions are conducted by algorithms and automated systems, but are managed and given instructions by humans. As humans are the product, it is important to make a distinction between behaviors that bring value and therefore will be categorized as human, and non-profitable behaviors which will be categorized as non-human or spam.

Like any new market, this automated market demanded standardization and authorization of the legitimate actors involved. Therefore, as I show in Chapter 4, it was crucial to illegalize specific unsolicited bulk communications and categorize them as spam. Despite spam and cookies having a similar rhythm, cookies were authorized by default (design) while spam was **filtered** out. The digital advertising industry did not want excessive behaviors, human or robotic, to interfere with the **measurement** of behaviors and, thus, efficient operation of the automated market they facilitated. A similar strategy happened in Chapter 3, where people's crowded ('bulky') behavior was promoted as long as it was part of legitimate commerce activities in retail stores. But when such crowded activities were in the streets conducted by peddlers or unions they were illegitimate and criminalized.

To authorize cookies, the advertising industry lobbied European Union legislators and the 'Internet Engineering Task Force (IETF) so that they would

be considered legitimate communications. Browser settings helped in this standardization process by ignoring the IETF recommendations (which were later softened) and not giving people listening capacities to inspect their own bodies. Here, again, the ‘back’ and ‘front’ ends of browsers default settings drew territory design boundaries of asymmetric power relations. This boundary determined who can listen to what; people cannot listen to what is being conducted to their bodies, while their bodies are a public listening space. In this way, the ‘back’ and ‘front’ ends also drew boundaries between the human and robotic behaviors that were conducted in different temporalities. The ‘back-end’ is operating a multi-layered market at fast-paced rhythms so they could **restructure the territories** people experience in the ‘front-end’ and, consequently, produce their options of living.

People, then, are the start and end points of this feedback loop, which operates in a continuous process of subject production. The dynamic database/archive the advertising industry produces based on people (according to profiles and segments of populations) also shapes the way the territory is reordered according to their actions in specific times. Ironically, during the period of Chapter 4, the digital advertising industry argued that the industry is too young to be regulated and that ‘innovation’ should not be stifled. Today, the same industry argues that it is too late to be regulated because this is the way things are.

These repetitive changes of the territory’s design aim to manipulate feelings by shaping different temporalities, and this was illustrated in a larger scope with Facebook’s ‘emotional contagion’ experiment in 2014. In 2017, Facebook also claimed to know when young teens are feeling down (worthless, insecure, anxious, etc.) according to their platform use, and then sold this vulnerable moment to advertisers who could target them and exploit their fragile emotional state (Machkovech, 2017). Trying to monetize people’s emotions is one of the ‘hottest’ debates at the moment with companies such as Verily, which is owned by Google, tracking the way people tap, type, and scroll on their phone to identify mental illnesses (Kaplan, 2018). Having more knowledge about people’s relations with other people, brands, content, objects and devices, whether these relations are silent or not, is used to influence their behaviors and feelings towards creating more value.

In their report about the way digital infrastructures create new opportunities for political manipulation, Anthony Nadler, Matthew Crain, and Joan Donovan (2018), argue that the digital advertising industry and other intermediaries weaponize data collection and targeting to strategically influence individuals and groups:

[D]ata-driven advertising allows political actors to zero in on those believed to be the most receptive and pivotal audiences for very specific messages while also helping to minimize the risk of political blowback by limiting their visibility to those who might react negatively. (Nadler, Crain and Donovan, 2018: 1)

But the main influence here, as they argue, is not really changing people's beliefs but rather the goals of such campaigns is to stir emotions, anxieties and resentments around specific topics. These strong feelings subtly influence the most vulnerable people's political decisions. But such infrastructures influence people not only in the context of politics with a big P, and not only the vulnerable ones. Rather, everyone is on the target because we all have moments when we are more emotionally receptive to specific messages and interactions. Every aspect of our lives is monetizable. And precisely here lies the power of these practices—They shape people's behaviors and perceptions, whether about politics, economics, music, film, sex or love.

Another way that Facebook conducts rhythmmedia is by using its other human processors, its paid workers—the content moderators. Similar to the telephone operators, content moderators also have to detect problematic content, people or brands, **filtering** them according to specific instructions (according to manuals that are updated constantly) and remember these actions so they can predict future problems. Content moderators are trained to become automatic machines, hidden from people and other actors; they are part of the communication channel but also its filter. 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.

This is what Astra Taylor (2018) calls *Fauxtimation*, a marketing strategy to make technologies seem as if they are 'smart' but importantly—operate with no human intervention. The purpose behind fauxtimation, as Taylor rightfully points, is that it reinforces ideas that if specific work is unpaid or underpaid then we won't need it. As she argues:

Automation is both a reality and an ideology, and thus also a weapon wielded against poor and working people who have the audacity to demand better treatment, or just the right to subsist. But if you look even closer, things get stranger still. Automated processes are often far less impressive than the puffery and propaganda surrounding them imply—and sometimes they are nowhere to be seen. Jobs may be eliminated and salaries slashed but people are often still laboring

alongside or behind the machines, even if the work they perform has been deskilled or goes unpaid. (Taylor, 2018)

Both telephone operators and content moderators illustrate the politics behind undervalued and underpaid work of women and people of color and the way their work is silenced. But as I have shown, there is a decision-making process used by these human communication channels, and the **filtering** that these workers deploy has immense implications for the way we experience and understand media, and, importantly, ourselves and our surroundings. Their work can determine which people and behaviors are considered to be illegitimate, deviant, noisy and spam.

At the same time, in all three cases, people are educated to take care of their bodies. As I show in Chapter 3, citizens of New York City were trained to be quiet, and operators had to eat a specific diet and take exercise to keep their bodies healthy. Chapter 4 shows how the EU Safer Internet Action Plans encouraged people to be aware of harmful and illegal content, rather than understand how the internet works, how to encrypt their actions and how to collectively protest against various things. Chapter 5 highlighted how Facebook encouraged people to report harmful content and harmful peers according to its community standards. People are produced as subjects that need to take care of their own bodies in a way that benefits the ‘health’ of the media companies. Here, Foucault’s notions of the management of the self emerges again, where people are expected to take care of their own well-being. Because people produce value for media companies, they have to be kept in good condition for monetization and trade, and not be too noisy.

Only these days more scholars and organizations call for ‘digital understanding’ (Doteveryone, 2018), and critical data literacies (Carmi et al, forthcoming) so that people would understand what’s happening at the back-end. However, as I mentioned above, understanding these complex media territories is hard because people do not have the resources and processing capacities of technology companies. So calls for transparency and ability to be forgotten from the archives of the web and platforms (like the GDPR enables citizens in the EU to do) is only a partial and very limited solution. If we still have territories with inefficient systems of ‘consent’ then people’s agency, self-determination and autonomy are not going to be possible options of living. It will still keep people responsible for exploitative practices conducted to their bodies and allow technology companies to treat people as objects to own and monetize.

As this book shows, order has its own rhythmmedia and it is often influenced by capitalistic considerations. Media companies' strategies are especially important as they are often intended to **de-politicize** behaviors, and un-crowd gatherings or mass actions of people. Designing mediated territories according to the ideal of personalization, is one of the consequences of such individualization. Personalization has been the main rhythmmedia promoted by Bell, the digital advertising industry and Facebook to cater to their business models that targets individual people to produce them as products.

This type of infrastructure that promotes individualization of territory also enables problematic algorithmic ordering, such as deceptive, misinformation or disinformation (political) ads, to go unnoticed and unchallenged because they run under the radar of journalists, scholars, regulators, politicians and the general public. Many of the problems democratic societies experience today—fake news, micro-targeting, disinformation, profiling, propaganda, and more that will probably be added while this book is published—are caused by the personalized mediated territories. They have been enabled by the normalization of surveillance through processed listening which creates huge databases that can be manipulated by the highest bidder.

At the same time, such personalized territories order a specific rhythmmedia which discourage, filter and remove political mass actions by un-crowding people. This is how power sounds like. Nora Draper and Joseph Turow (2019) call this type of 'helplessness' feeling - digital resignation, it is an "explanation for the inaction, limited actions, or inconsistent actions that individuals take in relation to their privacy concerns: they are resigned. That is, while these people feel dissatisfied with the pervasive monitoring that characterizes contemporary digital spaces, they are convinced that such surveillance is inescapable" (Draper and Turow, 2019: 2). They ask 'what contributes to this feeling' and the lack of willingness to engage in collective action. As I showed in this book, the main reason is these personalized territories, producing a particular individual experience which is meant to 'un-crowd' collective and political action. The dominant rhythmmedia that media companies orchestrate with personalization, then, produces asymmetric power whereby 'sociality' is individual, de-humanized, and raw material for intervention.

Such personalized territories include default settings, 'consent' boxes, temp-spatial orders customized for maximum profit and the illusion of control. Media companies' framing of 'control' constructs people as 'rational' data-objects, individual things that can have ownership over themselves just like these companies do. It maintains people's agency as reactive rather than *proactive*, limiting their

imaginings, actions and understandings. Media can be designed to promote collective actions where people can debate and negotiate how to live their lives and what the deviant means in different contexts of their lives. This will be an ongoing process which involves negotiating between multiple values and interests, and therefore not an easy task. However, considering where we stand now, it seems like it is worth a try.

The rhythmedia that media (re)construct, then, influences the way people think, feel, act, rebel, desire, protest, and interact with one another. Precisely because of this, the way that ‘deviant’ and illegitimate behaviors are (not) defined, constructed or negotiated is about power. Such power manifestations have transitioned from the direct action of sovereign and discipline power to soft power, a more biopolitical strategy operating by indirection, flexibility and mutability. This book opened the labyrinth that happens in the back-end, by amplifying its multiple communication channels and how they distort our lives. But there are many more yet to be opened. The way people are **measured** through media can provide a lot of insight into the way (non)humans are (re)configured, and, as the power of platforms increases, we must be able to critique and reject the stories they try to tell and sell us. Nothing in the way media are created, developed and used is inevitable, just as spam can sometimes be a tasty and interesting thing to digest.

Note

1. See Edina Harbinja’s (for example—Harbinja, 2017) work on what happens to people’s online data after they die.

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