Processing spam:

Conducting processed listening and rhythmedia to (re)produce people and territories

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Declaration

I hereby declare that this thesis and the work presented in it is entirely my own. Where I have consulted the work of others, this is always clearly stated.

Elinor Carmi.

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Abstract

This thesis provides a transdisciplinary investigation of 'deviant' media categories, specifically spam and noise, and the way they are constructed and used to (re)produce territories and people. Spam, I argue, is a media phenomenon that has always existed, and received different names in different times. The changing definitions of spam, the reasons and actors behind these changes are thus the focus of this research. It brings to the forefront a longer history of the politics of knowledge production with and in media, and its consequences. This thesis makes a contribution to the media and communication field by looking at neglected media phenomena through fields such as sound studies, software studies, law and history to have richer understanding that disciplinary boundaries fail to achieve.

The thesis looks at three different case studies: the conceptualisation of noise in the early 20th century through Bell Telephone Company, web metric standardisation in the European Union 2000s legislation, and unwanted behaviours on Facebook. What these cases show is that media practitioners have been constructing 'deviant' categories in different media and periods by using seven sonic epistemological strategies: training of the (digital) body, restructuring of territories, new experts, standardising measurements (tools and units), filtering, de-politicising and licensing.

Informed by my empirical work, I developed two concepts - *processed listening* and *rhythmedia* - offering a new theoretical framework to analyse how media practitioners construct power relations by knowing people in mediated territories and then spatially and temporally (re)ordering them. Shifting the attention from theories of vision allows media researchers to have a better understanding of practitioners who work in multi-layered digital/datafied spaces, tuning in and out to continuously measure and record people's behaviours. Such knowledge is being fed back in a recursive feedback-loop conducted by a particular rhythmedia constantly processing, ordering, shaping and regulating people, objects and spaces. Such actions (re)configure the boundaries of what it means to be human, worker and medium.

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Chapter 1 – Introduction: Spam, more than meets the eye

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 university. These processing procedures 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 realised that I am bored with superhero films, and will probably not watch another one any time soon. That changed after watching *Deadpool* a few months later. Media technologies also process things. They measure, collect, organise, 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 taking 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 (Ariel 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.

This dissertation is about how media practitioners are using media to process territories and the people who live in them. It looks at the way 'deviant' media categories, specifically spam and noise, are constructed and used to (re)structure territories and the people who live in them in a particular rhythm by listening to them. In this sense, it is a co-production of multiple human and non-human actors who operate in different degrees and agencies. I explore the power and politics behind 'anomalous' media categories and the strategies that interest groups use to process architectures and behaviours based on such categories.

Spam, I argue, is a media phenomenon that has always existed, and has received different names in different times. The changing definitions of spam, and the reasons and actors behind these changes, are thus the focus of this research. It brings to the forefront a longer history of the politics of knowledge production with and in media technologies, and its consequences. I am therefore interested in 'reconstruction of knowledge in the discursive practices' (Jäger, 2002: 58), which, in this case, means the reconstruction of spam as a practice and a deviant form of information; how did discursive and non-discursive truths come to be understood as such, and how did different media practitioners (re)produce media standards (categorised as the norm) that we use and understand today.

Spam and noise are seen as 'technical' media categories and are usually 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. Despite being an inseparable part of our lives, we actually know very little about these media categories. How do these categories affect the way we engage with and understand media? To address these topics, this thesis takes a few steps back and looks beyond the conventional understandings of these categories. But, while most scholars in the history of science and, in particular, media studies focus on vision and seeing as ways of knowing and producing knowledge, this thesis argues that using sound and, in particular, listening and rhythm can be more productive. I show the sonic epistemological strategies behind the creation of boundaries between specific behaviours as unwanted and processing them through media in order to produce a particular rhythm of territories and people.

Spam and noise also relate to how bodies are (re)configured through media. But how do different practitioners define, construct, control and manage the 'normal' mediated body? How do they establish what is human? This thesis argues that these processes involve seven sonic epistemological strategies that are reoccurring in different ways and degrees in the three time periods examined: training of the (digital) body, restructuring of territories, new

experts, standardising measurements (tools and units), filtering, de-politicising and licensing. 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.

The main objective of this dissertation is to make a theoretical intervention that develops an understanding of the processes that (re)produce deviant media categories. Spam and its earlier configuration noise need to be understood as key media categories that are used as powerful instruments that influence the way people and spaces are processed through media. The power of using these categories lies in their ability to influence the way people draw boundaries between what is human and non-human, what are their roles as workers, what is a legitimate behaviour and what is sociality. What this thesis points to is that these power relations are created not only in 'online' territories but also in 'offline' territories, *and* in between. In doing so, I emphasise the need to look beyond the internet and examine a longer lineage of technologically mediated processes. In this way, this thesis looks to (re)write the media history of the present.

The main contributions of this research are: 1) to offer an understanding of the power of deviant media categories; 2) to show the longer history of spam; 3) to show that processing people and spaces through media is not an exclusively digital or algorithmic procedure; 4) to use sound studies, and, in particular, listening and rhythm, as a theoretical framework to examine ways of knowing and power relations in media and communications; 5) to show the usefulness of using a transdisciplinary approach to examine media and communication phenomena and, in particular, to be informed by fields such as history and law; 6) to show reoccurring sonic epistemological strategies deployed through different media, times and spaces to produce people and territories.

The research standpoints

This project 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 was starting to look for academic material on spam, I was surprised by how few people have engaged with the topic, and realised that most of the texts written on spam have come from computer scientists. But, those texts already had a rough idea of what spam is or is not, whereas I wanted to dig deeper. I aim to see beyond the statistical measures they use to naturalise power relations embedded in creating spam as a computuing category. I saw 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 City 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. But, more than this, constructing specific behaviours 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 categorisation and their operationalisation. Therefore, spam is much more than a battle for attention; it is used to produce and manage people's bodies, preferences, behaviours and understanding of mediated territories. Therefore, this research takes a different path.

Which leads me to the second assumption. Brunton (2013) framed the time period of spam into three main 'epochs': first, computers and networks before the internet between 1971 and 1994; second, the introduction and commercialisation of the World Wide Web between 1995 and 2003; and third, the introduction of social media from 2003 until today. In this way, Brunton looks mainly at the way spam functions on the internet. This research, however, looks at spam as a much larger project of (re)producing

subjects 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 USENET[1] and Nigerian scams, this thesis examines the ambiguity of spam and shows how flexible and permeable the boundaries are. Importantly, this research shows how this ambiguity and fluidity of what seems to be a fixed category is used by media practitioners in different times. This broader perspective that moves between territories and time periods allows (media) scholars to see 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 relation exercised through and by media. There is an overwhelming focus in the media and communication field on vision, invisibility and seeing as ways to theorise and conceptualise power and ways of knowing, especially when it comes to new media. As Donna Haraway argues, '[v]ision is always a question of the power to see – and perhaps of the violence implicit in our visualizing practices' (1988: 585). Many scholars from different fields (Campbell and Carlson, 2002; Chun, 2006; Bucher, 2012a) use Michel Foucault's (1977) thought experiment, taken from Jeremy Bentham's design – The Panopticon – as a metaphor to explain the architecture of internet territories that conduct surveillance. Scholars use the Panopticon to explain spying and other modes of visibility used for mostly commercial 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*:

> 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

[1] Which is a global discussion system conducted on computers, started around the year 1980.

> 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 the 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. I develop two sound concepts in this thesis: I argue that, by deploying *processed listening*, various media practitioners (individuals, organisations or governments) listen 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 monetisable data. This is enabled by the construction of a particular rhythm I call *rhythmedia*, which spatially and temporally orders and regulates people and objects, through multi-layered and accelerated communication channels.

However, I do not offer a complete overhaul of theoretical thought into sound. What I do propose is that this theoretical approach and two concepts can be used as another way to examine power relations constructed 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 acknowledgment of more senses, including touch, for example (though this will not be developed in this research).

Conducting processes

The term 'process' was chosen for several reasons. First, to draw attention to the fact that both humans and machines do this activity.[2] Humans process

[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

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, interrelated processes can be done in different times and spaces. In that sense, a process is relational and corresponds with other conditions, which are negotiated and conflicted. Such notions were promoted and theorised by feminist technoscience, which rejected essentialism and argued for processes that are co-produced by humans and machines (more on this in Chapter 2).

Therefore, it is important to look beyond strictly human agency, which media studies tend to focus on. It is also important to look 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 emphasise that it is more fruitful to explore these processes as co-produced in different capacities and intensities. But, contrary to science and technology (Jasanoff, 2004) or Actor Network Theory (Latour, 1996, 1999, 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 mutating processes. In the context of this thesis, it happens on several occasions: the unwanted media categories (from noise to spam); the interest groups that aim to produce, structure, control and manage people and the territories they live in; the strategies that they use; and, finally, the architecture, where it starts and ends and what the materials are that constitute its boundaries – all of these elements change constantly.

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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.

Part of the problem with us still clinging onto fixed categories, as the geography scholar Reece Jones argues, is the fact we keep analysing '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, organise and limit it. Categories, he suggests, do not have stable boundaries[3] 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 this thesis looks at 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 *conducting processes*, there are still things that are missing that I will show here below, in particular, 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 conducts are using these flexible and permeable boundaries and how these affect the conduct of others.

'Conduct' is a key term for Michel Foucault, whose theory of governmentality guides this research. 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). Moreover, a conductor also serves as a channel or medium of electricity or sound. Importantly, conducting is also related to the person that guides the sound's rhythm, the ensemble of all the people who play the music, managing the instruments and their tempo into a particular

[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, behaviours and subjects.

order of sound. Thus, conducting is an intentional use of power to guide, manage, control and order people, tools, actions and processes.

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 control the rhythm that produces the time and arrangements of the ordering of elements. This study argues that this is done both in physical ‘offline’ territories and networked territories such as the internet. In this thesis, I show how the different ways of conducting processes by using deviant media categories are characterised by Michel Foucault’s modes of governmentality: sovereign, discipline and biopolitics. But, while Foucault focuses on the notions of circulation (which I term ‘rhythmedia’) of the city, including its architecture, roads, people, behaviours and desires, I aim to show that similar conducting strategies are deployed also in ‘online cities’ such as the European Union internet and Facebook.

By putting these concepts together, this study develops a critical perspective and tools of analysis 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 objects, but have overlooked other important insights by not engaging or looking at intersections, connections and genealogies that come through multiplicities. Second, the struggles and politics that lie behind producing what are legitimate and desired media categories and what are not. 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, mainly inspired by Donna Haraway and her seminal work *A Cyborg Manifesto* (1985), which sparked inspiration in many fields and will be discussed more thoroughly in the review of the theoretical and literature works that have influenced this research (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 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 this research – the boundary between private and public.

Part of the processes that have been conducted by media practitioners using media categories were used to redraw the boundaries between private and public territories and associate appropriate behaviours in each of those territories. This also correlates with what Haraway points out in relation to breaking the boundaries of what work means, especially when it comes to women's labour. What falls under the category of 'labour' is a common research topic for Marxists and feminists, but the way this boundary can be stretched and mutate is partly due to what constitutes private and public spaces. As this research shows, this is also an important strategy when it comes to unwanted media categories, as notions of public and private and how media technologies are utilised in reconfiguring such boundary lines is a paramount topic for this dissertation.

The case studies

The three case studies were chosen to examine the way that 'deviant' media categories are (re)produced in different media, times and territories. Using the case studies, this thesis aims to draw attention to the way that producing unwanted 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 discovered that spam is just the contemporary name that this unwanted media category has received on the internet. So, I kept digging.

Understanding the fluidity of illegitimate media categories allows us to look beyond the medium-specific characteristics and gain a better understanding of how historical, cultural and political processes have been influencing the way that 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, and a decade ago, they focused on Myspace. These days, it is popular to conduct research on Facebook, Twitter and Instagram, as well as through companies such as Google and Microsoft. Some of these companies may make it to the next decade, but some will not. As media scholars, it is important to take what we learn from these temporal case studies and look at them from a broader perspective of media power.

The evolution of the concept of spam has involved conflicts, standardisation, 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.

Research questions

This research makes interventions to several fields: from media studies, and specifically the sub-fields of new media, sound studies, media history and software studies, as well as other fields such as legal studies and science and technology. The main intervention in these fields is to shift the centrality of theoretical frameworks of vision and (in)visibilities when discussing ways of knowing subjects and objects in media, and looking at these practices through sound. I argue that practices that construct subjects, objects and territories as forms of possible being should be theorised and discussed from the perspective of sound and its associated practices such as noise, silence, rhythm and listening. Such theoretical frameworks that are well developed in

sound studies are more attuned to the internet's development and can be more fruitful in examining unwanted forms of behaviours and territories.

Media and communications scholars tend to focus on design and use, while sharing the same goals of engineering or believing them to be technically compelling. Thus, these scholars tend to adopt conventional presumptions about what constitutes media and communications, without questioning *why* and *how* these categories and practices have been considered legitimate. These questions are exactly what I am looking at in my research. I am interested in the processes that make behaviours possible options of living in a particular territory. In particular, I look at the rules of formation and the architecture that allow them to appear the way they do, and how these assemblages affect people who engage with them. I focus on unwanted media categories, because their forms show that looking at what is considered to be deviant can tell us a great deal about what is considered to be the norm. By doing so, I expose the arbitrariness of such categories and practices, the processes that lead to their appearance and the powerful positions they embody, as well as agencies that have the authority to make them. In addition, to my knowledge, this is the first attempt that tries to link noise, spam and cookies, while showing a connection between these concepts that shed light on one another. The main research questions that stem from this are:

1) How are people and their behaviours (re)produced in technologically mediated territories?

2) How are territories (re)produced through and by media?

3) What kinds of strategy are used to constrain, manage and control the decision-making process of humans in the offline and online territories?

4) How do these strategies affect offline and online territories' arrangement and infrastructure?

In order to examine these questions, this research uses three main case studies that happened in three different time periods: the 1940s, 2000s, and 2008 and after. The periods in each of the three case studies 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 decade and the third decade of the internet are different in many ways, and the evolution of this medium and the multiple media of which it consists mutate more rapidly than previous media.

I argue that 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-organisation and measurement of populations (their profiles, behaviours and preferences) and the territories in which they operate.

These turmoils, I argue, introduced a re-configuration of what it means to be human, worker, producer, 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, and in turn produced the territories on which they were enacted. 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 a-symmetric manner.

This excavation reveals the natural and taken-for-granted understanding of activities that have been categorised as a disturbance in communication systems, specifically spam and noise. These orderings shape our experience

[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).

both of technologically mediated data and our offline lives. They also have various consequences in the way people are structured and understood, as well as the territory in which they live and work. This dissertation demonstrates that trying to shape and control how people categorise, filter and organise the world through media has epistemological and ontological, as well as commercial implications for consumption and work, *and vice versa*.

Structure of the dissertation

Chapter 2 explores the transdisciplinary nature of this thesis, and specifically which features and concepts I take from each of the disciplines with which I engage, and how I assemble the theoretical approach to this thesis. I start with Foucault's theory of three modes of governmentality – sovereignty, discipline and biopolitics – and indicate how such power relations guide the research. Then, I discuss sound studies as the main theoretical and conceptual framework for this research, while focusing on the two main concepts I develop – *processed listening* and *rhythmedia*. Then, the chapter goes into the two main topics explored in this research, *territories* reconfigured through the fields of law, software studies and geography, and then mediated *bodies* and their associated fields such as media and cultural studies, cyber-feminists and evil media bodies. 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 outlines the research methodology and the methods I used for each empirical chapter (4–6). The methodology design stems from Jeremy Packer's (2010) five 'realms of inquiry', which a researcher should deploy in order to pursue archaeological excavations of media and communications: determinators, statements, competing discourses, materiality and subjectification. The methods are all qualitative and include: discourse analysis (of primary archival texts, as well as journalistic articles), policy analysis, semi-structured interviews, auto-ethnography and 'platform reverse engineering', which is a method I developed whereby I analyse academic articles made by Facebook's researchers to see what kinds of method they used and what the rationale is that guides the research. I used grounded theory to analyse the data I have collected.

Chapter 4 focuses on the two decades that preceded Claude Shannon's *A Mathematical Theory of Communication*, the 1930s and 1940s, and focuses on two main events: the Noise Abatements Commission (NAC) and the

training programmes Bell Telephone switchboard operators had to undertake before the conversion to the dial telephone. The focus on these two decades is intended to show a different history of the conceptualisation of noise according to Bell and cybernetics. It also shows how people were trained to be healthy and more like machines with the right rhythm. The chapter shows how the unwanted media category was developed by Bell to include people and practices that interfered with the smooth functioning of Ney York City and the telephone system. Part of this chapter was published on *Media History* in 2015.

Chapter 5 focuses on the dot-com bubble crash around the 2000s and the years after it in the EU. It shows the way the European Commission, advertising organisations and browser companies wanted to shape unwanted media categories and web metrics standards for the normal behaviour of both the users and their own practices. The main objective here was to legitimise specific unsolicited bulk communication that was constructed as essential for funding the internet in the shape of cookies, and to illegitimise similar practices that were constructed as harming and burdening the infrastructure, which is called 'spam'. This was enabled, among other strategies, by creating an artificial boundary between private space, which was associated with spam, and public space, which was associated with cookies. Advertising associations in particular continued Bell's project of measuring people's behaviour through browsers and using standardised, numerical and exchangeable units and tools. They also created a different *rhythmedia* by introducing multiple silent communication channels that turned people's behaviour into monetisable units of data without people's knowledge or consent. All of these were actions that helped to stabilise and institutionalise EU e-commerce and its associated practices – each actor has to learn its role in the newly created territory and the architecture in which they live. Part of this chapter was published on the *International Review of Law, Computers & Technology* in 2017.

Chapter 6 explores the way Facebook, as an example of the most dominant contemporary media in the western world, (re)produces its users into its own meaning of healthy, social and human through four filtering mechanisms. It

shows how, since 2008, when Facebook Connect was launched, the service developed measuring tools designed by the digital advertising industry, specifically cookies, pixels and impressions, even further and became an advertising network that provides a space in which people can live. Shaping the way people can live in Facebook's territory is done through four filter mechanisms, both human and non-human: its users, workers, architecture and algorithms. With different capacities, these four filtering mechanisms enable Facebook to produce, define, control and manage the correct behaviour in its territory and then filter it back and forth from and into the web with its social plugins. In doing so, Facebook becomes a powerful centralised and improved ad network that provides a space where people can perform Facebook's interpretation of 'the social'.

Finally, in Chapter 7, I show how the three empirical chapters (4–6) connect to one another using the seven strategies I identified and the transformations of the way people and territories are structured in each of these periods. These strategies are: safety training of the (digital) body, restructuring the territory, new experts, measurements, licensing, de-politicising and filtering (a macro look at these strategies and how they relate to each chapter and to one another can be seen in Appendix 1). Throughout chapters 4–6, I will highlight in **bold** when I explore one or several of these strategies. They will appear as such: **training**, **territory**, **experts**, **measurement**, **licensing**, **de-politicising** and **filtering**.

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 practitioners to know people and their behaviours by measuring them with particular tools and standardised units that enable them to be (re)produced into monetisable data subjects that can be easily exchanged. This creates a power relation whereby people and their behaviour are measured in different territories on the internet, but also in different temporalities, to produce subjects that can be commodified and sold, without their knowledge or consent. The reproduction comes in relation to the reconfiguration of the territory that feeds them back with specific options of living. Such options should yield more

value to the system, thus creating a recursive feedback loop with a particular *rhythmedia*.

As the three empirical chapters show, with Facebook, there is a return to the centralised monopoly model that Bell presented, in terms of control over the rhythmedia, and 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 users are produced into several data subjects that need to be taught through training programmes and/or territory design. These subjects include: becoming 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 programmes 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, and provide suggestions for further work.

Chapter 2 – Composing spam: Orchestrating a transdisciplinary approach of knowledge production

This chapter explores the theoretical approaches and literature influencing this research and, in particular, the concept of conducting processes of knowledge production through media. Because this research is at the intersection of media history, new media, media law and sound studies, this chapter outlines which concepts, scholars and research guide this transdisciplinary approach by amplifying the relevant issues and pointing out what this dissertation does differently. The chapter begins with the two main theoretical approaches that are woven together. The first is Michel Foucault's work on three modes of governmentality, which guide this research as characteristics of how power relations have been constructed by the production of knowledge through media. These modes of governmentality show how media categories have been used in different time periods to (re)configure people and territories. Therefore, it is important to explain what this thesis takes from Foucault's theory and what needs to be further developed in light of the internet, such as the notion of digital bodies. The second theoretical approach this research fuses with Foucault's modes of governmentality, and specifically power, is sound studies. This is done through the development of two key terms that guide this thesis: – *processed listening* and *rhythmedia* – as ways to think and analyse knowledge production through media.

After establishing the theoretical foundations of this thesis, the chapter then moves to two other clusters of scholarly work, the first looking at how mediated territories are (re)arranged to influence bodies and behaviours, and, the second focuses on how bodies and behaviours are (re)configured through media. In the first section, key concepts from fields such as geography, media law and software studies will be 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 the way they challenge categories of what it means to be human and machine, along with related topics such as digital anomalies including spam, computer viruses and bots, will be explored. Orchestrated to fit the objectives of this research, these scholarly amalgamations create the foundation of this thesis.

Re-processing Foucault's modes of governmentality

In an important essay explaining why we should study power, Michel Foucault argues that his work has always been about creating histories that construct people as subjects, or, as he calls it, 'studying the objectivising of the subject' (1982: 778). Throughout his career, Foucault examined subjects such as the mad, the sick, the criminal and, of course, his most extensive project, the sexual subject. Similarly, this thesis creates a history of the way people are (re)produced through media. The epistemological and ontological project that re-arranges shapes and manages them is the main focus.

This thesis examines the way in which subjects are (re)produced through Foucault's development of the power-knowledge axis, his 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 France[5] in 1977–1978, titled *Security, Territory, Population*, and the subsequent lectures in 1978–1979, titled *The Birth of Biopolitics*.[6] 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 kinds of power relation transformation are

[5] 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.

[6] The English translations came out only in 2007 and 2008.

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.

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. The three modes of governmentality have 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).

Such manifestations of power are not a top-down kind of power, but rather more complex entanglements of relations that emerge and occur within particular times and spaces. Importantly, power does not inherently exist in people, spaces or government institutions; 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 tempo and ordering of different components in a specific time and place – it is about conducting rhythmedia[7] (more on rhythmedia below). A relationship of power is an ongoing practice that is exercised on people's actions and things through force, modifications and enabling or restricting possible fields of action and living.

In this context, this dissertation takes power to relate to media practitioners who produce knowledge by conducting different listening capacities (more on

[7] Foucault terms this way of arranging and managing the city – products, people's activities and the architecture in which they operate – as circulation. I find 'rhythmedia' to be a more useful term than circulation, as it allows us to describe more processes whereby things and people relate to each other in a specific architecture.

this below). This listening practice enables them to know people and their relations, and then (re)produce, modify and use them to generate more value. At the same time, media provide people with territories to live in and communicate with others. Therefore, power enacted on people's actions is also conducted with rhythmedia, by the modification and manipulation of 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.

Foucault relates sovereign to a ruler who exerts power over his land and the people within the borders of this land. In his later work about discipline, power is exercised through institutions such as schools, clinics (Foucault, 1973) and prisons (Foucault, 1975) on individuals' bodies through training and specially designed architectures. 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 contained territories structure asymmetric power relations governed by rank, whereby some actors can listen and thereby know more about people than others. Therefore, a special kind of power-knowledge axis is created; a complex ensemble of architecture, people, objects and, as I will show, the rhythm that conducts these material compositions in a recursive process of transformation that (re)arranges how they relate to one another.

The concept of biopolitics comes from Foucault's later work from his 1978–79 lectures, where he focuses on the state and police as a spatial intervention mechanism of cities. Although Foucault uses the word 'technology', he does not mean it in the literal way and his work never focuses directly on media. This thesis, however, focuses on media corporations 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 corporations, which have been penetrating people's everyday lives.

Media corporations' increasing role in people's lives has been accelerated, especially since the introduction of digital and automated media, since Claude Shannon's information theory in 1948 (more on Shannon in the next chapter). Media are both the tools and territories where people perform life, and where people are produced and linked. As Foucault argues, governmentality is enacted on 'men in their relations, their links … their relation to that other kind of things, customs, habits, ways of acting, and thinking' (1991: 93). In this study, this architecture is constantly mutating and is influenced by code, protocol and algorithms, but also by the people who operate in it. At the same time, people and their relations to other people and things are conducted and filtered through them in certain ways, which provide possibilities of being, expressing, communicating, working and, ultimately, living. Therefore, examining media power through Foucault's theory of governmentality is an important contribution to the media and communications field.

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, governing a population entails a myriad of meanings; it includes a continuous and active control over people's bodies, movements, souls, behaviours and desires. It must be taught and understood in 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 is the focus on relations between people, and how the state can enact power on their actions. The 'reason of the state' is thus a practice that presents itself as a rationalised given and, at the same time, is in a constant process of construction.

The new approach towards the population, now seen as an object for intervention, then has a drastic conceptual change; instead of disciplining people as individuals, prohibiting and limiting their actions with specific rules and regulations that tell them what they cannot do, in biopolitics, states have started to do the exact opposite – allowing people to do whatever they want to do in the pre-designed architecture provided for them. This also means that the way knowledge production is conducted through media on people and the territories in which they operate is also changing. 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 rigidness becomes more flexible. As this thesis shows, not having distinct and clear definitions can also be powerful. But, whereas Foucault and most media and communications scholars theorise power relations through vision and (in)visibility, this thesis uses sound. The way that this thesis uses sound and the two main terms of processed listening and rhythmedia will be outlined in the following section.

Sound as a conceptual framework

Sound studies is a relatively new field that takes sound and its associated practices as its entry and departure points.[8] Looking beyond the automatic association with music, sound studies explores sound practices of value (Ihde, 1976; Attali, 1985; Bijsterveld, 2008), hearing and deafness (Sterne, 2003; Mills, 2011a, 2013), technologies (Mills, 2011b), formats (Sterne, 2006, 2012a), art (Kahn, 1999) and cultures (Birdsall, 2012; Thompson, 2004).

[8] 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 4 from this thesis. 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 established fields that these scholars came from and challenged such disciplinary boundaries by putting sound at the centre of thought and analysis.

These academic works show how sound and its practices, such as voicing, listening, silence and noise, are important for understanding the way social and media power relations are constructed. Earlier research has been published on sound and listening-related issues, but has not been categorised under the sound studies umbrella. Such important work came from fields such as acoustic ecology, especially the influential work of Murray Schafer (1977), who coined the term *soundscape* to describe sonic environments. The field is still developing, and, in 2012, it has welcomed two important collections: *The Oxford Handbook of Sound Studies* (Pinch and Bijsterveld, 2012) and *The Sound Studies Reader*, edited by Sterne (2012b).

Importantly, sound is a good conceptual framework to work with because of its connection to space. Contrary to vision, which makes seeing depend 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. As Kate Lacey (2011) argues, sound has richer qualities of transmission, such as vibrations, reverberation, echo and resonance, and they shape objects in space in inter-relationships. In doing so, sound practices, and particularly listening, can be used in the ongoing practice of reordering and structuring the boundaries of bodies and territories.

These are powerful affordances with which sound studies allow us to think and analyse. Thus, sound is useful for this research as boundaries of public and private spaces, but also bodies, are demarcated by using media technologies' architecture and tools. Instead of conceptualising media's power in selecting, ordering, classifying, ranking and filtering information and behaviours by using vision (Crary, 1992) and structuring (in)visibilities (Bucher, 2012a), I argue that it is more productive to use sound, and particularly listening.

Listening to produce knowledge

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 has been defined as 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). Environment, culture and especially media structure and condition subjects in particular ways. Listening, on the other hand, is different, though not necessarily contradictory, to hearing.

This research looks at practitioners who are owners, managers and controllers of media and the way they produce knowledge through sonic epistemological practices (Volmer, 2013). As Rice (2015) argues, types of listening, its terminology and acoustic agency have been developed alongside sound technologies. For him, listening gives the ability to tune in and out of spaces in a selective way; it 'is understood to involve a deliberate channelling of attention toward a sound … The term encompasses a wide variety of modes, qualities, or types of auditory attention' (Rice, 2015: 99). Therefore, ways of listening are shaped by technologies' affordances and design, and increase the scale, things, people and data practitioners can listen to.

As Lacey (2011) points out, listening has been neglected in media and communication scholarship, although it is a political, embodied, dynamic activity. As she observes about the qualities of listening, they 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). Listening, then, is more suitable for multiplicities of actors, spaces and forms of communication. This thesis argues that listening

enables the ongoing collection, categorisation, recording and archiving of people and their behaviours in mediated spaces. The more listening capacities media practitioners have, the more they can produce knowledge that can be used to construct power relations.

This thesis uses listening as a way for practitioners to produce knowledge through media. Listening as a knowledge production practice has been examined by scholars from the history of science and science and technology studies, who look at the way different practitioners and specialists produce knowledge by deploying modes of listening. Such practitioners range from car mechanics who listen to engines and the automobile's body to detect a problem (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).[9] However, there is very little research that looks at 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. As Rice shows, doctors *learn* how to listen to what he calls 'acoustic traces of bodily processes' (2010: S41) through stethoscopes to diagnose the condition of the patient's body. His research shows how listening is a learnt embodied experience, whereby doctors use tools to enable or enhance their listening abilities. 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 looking at modes of listening, Alexandra Supper and Karin Bijsterveld's (2015) research on sonic skills has been helpful in developing this thesis's sonic epistemological practices approach. Supper and Bijsterveld (2015) argue that practitioners' sonic skills are developed by three types of learned

[9] This thesis does not, however, look at the way media practitioners listen to different people in order to produce voice recognition technologies (Voskuhl, 2004).

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 *interactive* which they developed and means the ability to focus on different sound sources and switch between different sound elements to create a new one.

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) emphasise 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.

Such devices and tools take centre stage when it comes to media practitioners as they intermingle and become not only devices for listening but also 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.[10] This dissertation addresses precisely these practitioners, while focusing on the development of listening capacities, devices, measuring and their standards.

Processed listening – A new mode of listening

When it comes to media practitioners, the six modes of listening outlined above are not enough[11] to capture the complexity of multiple actors listening to people in different media spaces. Moreover, 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 subjects, objects and territories. One of the main differences here is that the knowledge that is being produced is co-creating the subjects and objects that are being listened to in a recursive feedback loop. In the case of digital spaces, bodies and architectures' ontology is always in a process of being (re)constructed in multiple temporalities and spaces.

Feminist technoscientists (Haraway, 1997; Braidotti, 2002; Barad, 2003) have also been developing 'processed-based' philosophies.[12] They do not necessarily use the term 'process', but rather 'becoming' or 'nomadic' (Braidotti, 2002), and 'preformativity' or 'agential realism' (Barad, 2003). Although each scholar provides a rich and different understanding of their key terms, they broadly mean the rejection of a fixity of ontologies and materialities. These scholars reject essentialism and fixity, and argue for processes that they argue are co-produced and relational by humans and the

[10] Listening on the internet by 'normal users', however, 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.

[11] This follows grounded theory, which argues that the empirical work and data analysis researchers conduct informs their theory and not the other way around. More on grounded theory in Chapter 3 on the methodology.

[12] 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).

non-human. This thesis is inspired by their work and takes it in different directions 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. For her, there is an intra-action, a preformativity of matters, which means that '*apparatuses are dynamic* (*re*)*configurings of the world, specific agential practices/intra-actions/performances through which specific exclusionary boundaries are enacted*' (Barad, 2003: 816, emphasis in original). However, Barad (2003) does not provide an account of this 'dynamic' force of (re)configurations.[13] This means that, although Barad and other feminist technoscientists argue for process theories, they do not fully develop the temporal and spatial considerations of the *process* itself. Moreover, although Barad (2003) challenges western cultural notions of representionalism, she and other feminist technoscientists still use vision and invisibilities as ways of knowing. Therefore, although their arguments about the body *and* process have been important for developing the theoretical framework for this thesis, there is a need for further development.

Following these theories, I propose a new mode of listening (which 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 (for example, disc jockeys). *Processed listening* is a mode of listening whereby practitioners who can come from different professions and interests (individuals, organisations or governments) listen 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.

[13] 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 *rhythmedia* in the following pages.

When it comes to listening in and through media, as this research shows, 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. Moreover, Supper and Bijsterveld (2015) also focus on listening to a single body, whether human or machine, and how, even if they talk about different sounds that the body makes, it is still a single unit. In this research, however, while listening is conducted on individual bodies, they are, at the same time, listened to as a population or groups of classification/profiles; listening is conducted both on the individual body and bodies as populations/audiences. Further, Supper and Bijsterveld focus on a particular event, whereby the practitioner conducts the listening, making it temporally and spatially constrained. In contrast, this research shows that listening can be done in different times and spaces.

Here, Birdsall's (2007) notion of breaking the boundaries of spaces is useful, as *processed listening* is practiced 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 collect, categorise, 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', which 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 this thesis also enable media practitioners to listen and produce the people to whom they listen.

In particular, when it comes to digital 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). 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 can be seen, for example, in Chapter 5, 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.

These mediated territories create different temporalities, which stretches the listening event into a continuous process that is conducted in a recursive feedback loop. Such recursive rhythms are not discussed in the events of the listening modes that Rice (2010, 2013), Supper and Bijsterveld (2015) and others develop, which are constrained by a particular time or an event where the listening is conducted. This could be a medical physician examining a patient in her room, or a car mechanic examining a car in a garage. In these cases, there is a known beginning and end to the listening event. In the *processed listening* mode that I propose, however, the time of the listening event stretches into a continuous process that creates a feedback loop of knowledge production that co-creates different objects, subjects and the architectures of these spaces.

Processed listening is a useful theoretical concept for this research as it examines how multiple actors listen to bodies, with different tools and for similar purposes. These goals are to know people and their relations in order to produce them as data that can be capitalised, and then (re)arrange them and the architecture accordingly. In this context, the internet reorders the biological body's soundscape boundaries, and opens the digital body to public (listening) inspection by foreign and sometimes unknown actors.[14] This introduces new power relations that are at the heart of this research. Such power relations, which produce people as particular subjects and the territories in which they live by knowing them in particular ways, are what Foucault has been focusing on throughout most of his writings. The way all these elements are arranged is conceptualised through *rhythmedia* and will be discussed below.

[14] As Chapter 4's second section on the telephone operators will show, such practices also happen 'offline'.

Rhythmedia, an ordering mechanism

The other key conceptual term that I have developed as part of this dissertation is *rhythmedia*. This term means temporally and spatially ordering the knowledge produced through *processed listening* and, therefore, these two concepts are complementary. 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 sees 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 thesis, 'everything' that is being assembled is precisely the *processed listening* as knowledge-production practice. The complementary process to that, then, is *rhythmedia*. Rhythm as an ordering mechanism, as Lefebvre (2004) argues, 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 (in *Discipline and Punish*, 1979) 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, 'What 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 *and* people and their behaviours. 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. However, this thesis develops rhythm as a key theoretical term because circulation implies a focus on spatial considerations and not on temporal ones. Rhythm also emphasises the notion of training by repetitions in order to become particular subjects, which is cardinal to this thesis.

Both Foucault and Lefebvre are also interested in the body and seeing 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 are learned. While Foucault calls this training the 'instrumental coding of the body' (1972: 153), Lefebvre sees learnt repetitious behaviours as 'dressage'. Related to the disciplinary mode of governmentality, Foucault argues that regulation of the time of 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' (1972: 154). They show the training of the individual soldier and the army as a whole. This means that they focus on 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). This repetition is related to the measurement and optimisation 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 individuals, who understand their position both socially and

choreographically, but also as an army, a whole. Repetition uses previous elements to modify and transform bodies[15] and things. In this way, the recursive feedback loop relies on the memory of previous knowledge and measurements to (re)produce people and objects. Although there is a difference in repetition, as Lefebvre argues, there is no separation between material-living bodies and social-representational bodies. In that sense, he alludes to the lack of distinction between biological and mediated bodies, as I argue below.

Talking about media publishers and their ordering practices, Lefebvre argues that the '[p]roducers of the commodity of *information* know empirically how to utilise 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). Although he talks about media content, the same thing can be applied to mediated territories; media practitioners are the conductors of the rhythms that (re)produce people and territories. The 'output', as he calls it, in the context of this thesis is related to how the order of the architecture and training of people changes according the intention practitioners have at that moment in time. 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, gain power with their ability to conduct other actions. This power does not pre-exist, but is enacted as part of conducting both *processed listening* and *rhythmedia*.

Other scholars have also been interested in media practitioners' ordering practices. The most prominent one is the British culture studies scholar Raymond Williams, who looks at similar ordering practices through the

[15] 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).

concept of flow. In his research on the television (Williams, 1974), he shows how television networks and advertisers want to reorganise the way people experience programmes 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 looking at the television experience as a whole rather than 'just' the content, specifically how its flow is influencing the way that social life is performed and thought of.

In the early days of television broadcasting, as Williams (1974) shows, the transition between shows was marked by a sound or visual cue that signalled the intervals between distinct programme units. However, once these programmes 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 be seen as 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 reorganisation of time changes people's experience of television and serves the financial incentives of networks and advertisers.

Both circulation and flow are mainly concerned with organisation, meaning that the units they are organising (for example, television series) are usually fixed and finished. Rhythm, on the other hand, allows for further interventions within such (knowledge) ordering, which also restructures the boundaries of such units; it is more about processes of recursive feedback loops that reproduce such units according to different temporal and spatial conditions. Rhythm is more similar to the way Shintaro Miyazaki defines it in relation to algorithms, or what he calls 'algorhythm':[16] 'elementary movement of matter,

[16] 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.

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 in relation to who is conducting such rhythms, and how they actually orchestrate them. This research, on the other hand, focuses on media practitioners and the way they conduct such rhythms, both temporally *and* spatially.

In the context of this thesis, 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), and the intentions of the media practitioners. While this knowledge is produced (collected and recorded according to particular measuring units), it is ordered (categorised and filtered) in a particular way, and this is where the concept of rhythm comes into play. From the empirical material of this research, I developed the concept of *rhythmedia*, as a theoretical concept that examines how media practitioners (re)order people (bodies and behaviours), 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 done while relying on previous categories and metrics.

Rhythmedia is the way media practitioners conduct repetitious training on people through orchestrating the way they live in multiple media territories.[17] These practitioners conduct the way architectures change according to the knowledge they gain from listening to people's behaviour. 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.

[17] 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).

Processed listening is a process whereby practitioners decide which bodies count and how to count them (with specific tools for measurements and standardised 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 particular way. In doing so, these two theoretical concepts are productive in their power to produce specific arrangements and options of living and architectures. The power of (re)production is also media practitioners' ability to decide what will be a legitimate knowledge (people, behaviours, objects) and rhythm. As the empirical chapters will show, when specific bodies, behaviours and rhythms interfere with media practitioners' business model(s), they illegitimise them in various ways. It is this conduct that enables power relations to be constructed, but only when processed listening and rhythmedia are put into action. Therefore, power does not pre-exist such processes and comes into play when they are practiced. As the empirical chapters show, such practices (re)produce people into several ontologies: users, producers, workers, communication channels, the 'message' and filters.

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. The way media practitioners have been conducting processes by using media to construct people's behaviour and the architectures they operate in order to (re)produce them will be examined through discipline and biopolitics. I have also discussed the two key terms I developed – *processed listening* and *rhythmedia* – and how they are used in the context of this thesis. Each of the concepts will be used to explain how practitioners use the seven strategies that reoccur in different ways and degrees in the three time periods examined in this thesis. The strategies of **new experts**, **licensing** and **measurement** are part of processed listening, whereas the strategies of **training of the body**, **restructuring territory**, **de-politicising** and **filtering** are part of rhythmedia.

In the two main 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 behaviour through media. Then, the second part outlines how people's bodies and 'deviant' behaviours have been (re)configured through media in academic literature. In each of these sections, relevant approaches will be woven, while taking into account concepts that have been useful to develop the thesis. At the same time, throughout the sections, various gaps will be shown that this dissertation fills.

Mediated territories through geography, law, software

There are three main scholarly fields that look at mediated and networked territories and the way it orders things and people who operate in them: geography, law, and software studies. Each of these fields looks at different architectures' designs and features, which are created and 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,[18] location and site. In this section, I will show which scholars from these fields have influenced the way I use territory in this thesis.

Geographers look mainly at territories in the material sense, and the politics behind states and other regional, governmental and religious entities drawing boundaries and borders. Clarifying the concept of territory, Stuart Elden (2010) argues that 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

[18] 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).

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:

> [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. 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, seeing people as populations, as objects and things. Elden's approach to territory as a political technology is particularly relevant to this thesis because he emphasises measuring techniques and tools that, in the context of this research, mean different media. He also emphasises that territory is not a static concept, but he does not fully develop exactly how it changes. This is where rhythmedia is a fruitful concept as it acknowledges spatial and temporal processes. 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. As Elden argues (following Foucault), states are the entities that demarcate these boundaries, and by doing so they produce both territories and population. Conversely, this thesis focuses on media practitioners as those producing territories.

The empirical chapters in this thesis focus on Bell Telephone Company, the digital advertising industry and Facebook as different companies and practitioners that have state-like powers, and sometimes even more. They develop, own and manage measuring techniques, tools, units and devices and standardise them. As Evelyn Ruppert (2011) shows in her research, 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 telecommunications, which, during the end of the 1980s and the beginning of 1990s, saw moves towards privatisation. This does not mean a complete transition of power between states and commercial companies, but rather a complex negotiation and struggles of power in which the people, the citizens, seem to be at the bottom of power relations.

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 re-organise and demarcate new social hierarchies and urban territories through smell. The French city was redesigned to create better sewage systems and different architectures to create boundaries between the different classes of smells and humans. Importantly, 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 detect, calculate and analyse 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 computer or internet-related phenomena, as many new media scholars tend to present. This example shows how similar strategies of conducting processes by producing knowledge through media have been used in multiple territories, physical or digital. This is the reason why this research looks at 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 was 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 that characterised that period and mainly stemmed from the US west coast hippie (but very masculine) culture, also pointed to the narrowing of public space and, at the same time, its privatisation and 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) and commercial actors. Peeling the layers of the history of the internet, Janet Abbate uncovers how processes of standardisation have been restructuring the internet's architecture, value and use, quite radically from its inception in the 1960s until its commercialisation in the 1990s. The meaning of the internet, she observes, 'had to be invented—and constantly reinvented—at the same time as the technology itself' (Abbate, 1999: 6). What is useful for this thesis is Abbate's outlining of the way that, in each decade, new and different interest groups joined this standard struggle while others were made redundant or left outside the power game. She also emphasises the way users were co-creating the internet with their spontaneous decisions. Therefore, her work is important in showing how the

internet's architecture mutates rapidly and is influenced by standards conflicts with changing interest groups *and* users' behaviour. Each of these media companies uses different strategies to influence and shape the internet according to its needs.

State and regional law 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 spaces 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. Lessig argues that, 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 architecture, 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). But 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 construct behaviours to produce particular subjects.

The capacity of governments, commercial actors or other organisations to control behaviours, argues Lessig (1999), depends on the way the architecture is designed, the way that code is drafted. Behaviours 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 behaviours directly or indirectly in cyberspace: architecture, market, law and norms; and each of them influences in a different way and capacity. These four factors will be examined in different capacities in this research as they provide good criteria to look through media categories.

While Lessig looks at code, protocol is another way to control behaviours in mediated territories. Laura DeNardis (2009) focuses on protocol as an important factor to regulate behaviours on the internet by looking at 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 observes, 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).

Because the internet's architecture is made of code, software, algorithms and protocols, a new field started to take shape to tackle the sensibilities of these computational building blocks of this territory. 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.[19] 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). This field, then, was further developed by other scholars

[19] 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.

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).

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. This research, then, is very influenced by her work, but, as elaborated above, modes of listening can be more productive in examining such power processes.

Several scholars who come from geography disciplines also contribute 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 term code/space draws a lot of inspiration from the work of the science and technology studies scholars Susan Leigh Star and Sheila Jasanoff, whereby they argue 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).

This approach is useful for this research as this thesis also seeks to explore the multiple processes conducted by and on human and non-human, architecture and algorithms, and also law. However, instead of arguing that people and things 'fold' together, this thesis argues that they are (re)produced in a particular *rhythmedia* by media corporations. Software, code, algorithm and protocol affect not only non-human actors but also humans, as their operations and executions dictate and direct the way that people can behave, understand and communicate with and through computational territories. However, software studies scholars tend to conceptualise such ordering as 'how events can occur' (in the Fuller quote), or using terms such as 'flow', 'alive' or 'coded processes'[20] (Kitchin and Dodge, 2011: 5–6). Such terms and arguments conceptualise spatial and temporal orderings as if they 'just happen' without any planned strategy behind them. On the other hand, this thesis uses rhythmedia to examine how architectures order people, objects and territories through media.

[20] 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).

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 about multi-layered spaces, it seems quite odd that vision has been chosen to describe power relations. This research takes software studies' focus on architecture and various computational procedures (code, protocol, algorithm etc.) but uses processed listening and rhythmedia as concepts with which to theorise. The way that bodies are configured through such territories is examined now.

Mediating the boundaries of bodies and their behaviours

The periods examined in this research mark significant turning points, ontological changes in the way that the human body is configured. Between the emergence of electronic media in 1920s telephony, through the development of broadcasting, computers, the internet, to contemporary social media platforms, the concept of 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. Feminist technoscientists have been discussing these false divisions of bodies for decades. Challenging the boundaries of foundational categories such as human, machine and animal, Haraway (1985) shows that a lot of our understanding of the boundaries of these categories, and, in particular, the division of physical and material versus non-physical and material, is much more fluid and flexible. As she argues in a later account, '[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 that sense, it would not be accurate to discuss 'offline' and 'online' as oppositional presences,[21] but rather 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). This is particularly useful for this dissertation, as the way media categories are used affects people's lives. Therefore, conducting processes on people, their identities 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.

Post-human feminists examine similar topics of boundaries of the body, and one of the most prominent is Katherine Hayles (1999). Coming from literature, Hayles provides another perspective on how the post-human is assembled, focusing not only on science but rather on science fiction. She rejects essentialism and argues that there is no distinction between biological bodies and computer simulation. She emphasises 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 post-human coexist with changing configurations according to historical and cultural contexts.

Hayles is particularly relevant to this research as she examines concepts of embodied and disembodied subjectivities in cybernetic discourse. This dissertation also looks at cybernetics, but focuses on its development of noise as a significant unwanted media category that was a predecessor to

[21] As Irma van der Ploeg (2002) argues, our identities as citizens, consumers and workers are increasingly mediated by information systems that are digitising our bodies, thus the body becomes 'the informationalisation body'. Van der Ploeg observes that there is a need to re-think 'the dichotomy between embodied identity or physical existence on the one hand, and information about (embodied) persons and their physical characteristics on the other' (2002: 58). This thesis aims to challenge such dichotomies and go further back before they were digitised to show longer lineages of similar practices.

spam. Whereas Hayles's departure point is 1945, this research focuses on the two decades that preceded Claude Shannon's 1948 mathematical theory of communication. The reason behind this is to flesh out key events that influenced the conceptualisation of humans as informational processors, and, importantly, their bad behaviour as noise. What cybernetics introduced, as Hayles shows, is a new categorisation of life forms, which reorders and prioritises information in the shape of code made of bits (invented by Shannon). Information, however, as Hayles emphasises, exists only through media, and, as this thesis 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. Spam is usually associated with such illegitimate forms of digitally mediated life or behaviour, and the way that scholars examined them will be discussed below.

Evil bodies, deviant behaviours? Spam, computer viruses and tricksters

Very little scholarly work has been conducted on spam in the social sciences. The two most prominent works are *The Spam Book* (2009), an edited collection by Jussi Parikka and Tony Sampson, 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 behaviours. 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' have been 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 spread during the 1970s through ARPANET's network. But, as 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 that 'live' program had similar behavioural characteristics to the 'authorised' programs. Here we can see rhythmedia in action, and how some orderings are framed as productive while others as disruptive. Computer viruses were perceived as a threat to the 'normal' and 'appropriate' code of conduct on the internet, just like spam.

Another strategy of rhythmedia is the training of the body and this can be seen in the way people have had to learn how to behave safely on the internet. Since the proliferation of computer viruses, argues Parikka, people have had to be trained and educated to become more aware of security while using the computer because they need to be accountable for the 'safety' of their digital bodies. It was portrayed as if it is crucial to maintain people's digital bodies' hygiene and safety by creating an immune system that will be secure from contamination. These online immune systems can be both systems deployed by the software itself, by anti-virus/spam companies, and through self-examination, observation and reporting performed by users (for example, installing anti-virus software or marking a message as spam).

Computer science scholars have analysed the behavioural 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 studies on computer immunity systems is by 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 that computers need to be 'protected' means the organisations that produce and manage the applications believe that these need to be under their own control. This means that such media practitioners want to protect their devices and services and, therefore, anything that might harm them will be categorised and reordered as non-authorised, dangerous and, importantly, 'non-self'. This kind of argument also gives a digital life, a 'self', only to legitimate users who behave appropriately according to rules drafted by various media companies, while 'taking life' from illegitimate ones. By doing so, computer scientists are conducting rhythmedia, redrawing the boundaries of the normative and healthy body that should live on the internet.

Unlike her previous studies, which relied on the ability of immune systems to distinguish between normal and abnormal patterns of behaviour stored on hard disks (Forest et al., 1994), in 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, and after this knowledge production they conduct rhythmedia to establish and structure what are legitimate behaviours that will be a desired 'self', an authorised body. But determining the role and purpose of the immune system, and the way in which 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 this research: who has the authority to conduct these processes and for what purposes? How do they produce authorised bodies/subjects?

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 corporations who want to conduct people’s experience with them. 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 rhythmedia, the ordering by which they were instructed to behave. From specific groups such as tricksters, phreakers, crackers and hackers (Jordan,1998, 2009, 2016; Coleman, 2011, 2012, 2014; Kubitschko, 2015), to illegitimate actions such as flaming and trolling (Karppi, 2013; Bishop, 2014; Phillips, 2015), and distributed denial of service (DDoS) (Sauter, 2013, 2014), all of these behaviours have also been categorised as spam(ming).

An example of the kind of activity and content people were instructed to adhere to can be seen one of 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). Such emotional outbursts expressed in an email 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 behaviour, rhetorical performance, the role of cues online and

so on. Flaming is usually termed ‘uninhibited behaviour’, 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 behaviour as an aggressive anti-social activity that should be avoided. Similar to this research, what Milne shows is that flaming, like spam, is much more nuanced and cannot be boxed into oppositional definitions.

Other practices related to networked computing, however, are frowned upon. These were usually portrayed as an illegitimate way of using the internet’s infrastructure and often called hacking. This category is important to this research because the boundary between legitimate use of networked computers and hacking is not always clear and, therefore, it is instrumental to see how this line is drawn. Attempts to manipulate, play, disrupt and test the boundaries of media technologies have been usually carried out by humans[22] 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 made 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 emphasise 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 company try to present radical ethical differences between their practices and illegal computer intrusion. In one context, this will be called ‘maintenance’ and ‘security’ and in another ‘hacking’. The

[22] Although also by animals, as Helen Pritchard (2013) shows.

difference is drawn by reordering, meaning categorising and orchestrating different architectures for each of these practices.

These actors have taken the authority to categorise what is a proper online activity to influence and construct what they perceive to be the appropriate behaviour on the internet. Gabriella Coleman (2011, 2012, 2014), argues that what computer hackers do is *reorder* a network infrastructure, or, in the context of this thesis, they try to conduct rhythmedia. Therefore, constructing media categories is a powerful instrument to draw boundaries between legitimate and illegitimate behaviours of actors who are participating in this territory; from 'ordinary' users to commercial companies, governments, criminals and pranksters.

Another media activity categorised 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 behaviour, which is usually categorised as an 'attack', overrides netiquette, because it is both a 'burden' on the infrastructure and is considered to be an infringement on the property rights of private actors (i.e. websites or platforms). Being a burden and an infringement is the way to categorise such action as illegitimate, although similar behaviours are conducted by media practitioners.

According to Sauter, DDoS is a technique used by activists, criminals (for cases of extortion, harassment etc.) and bots,[23] 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, categorisation of behaviours on the internet is a rhythmedia practice; it helps in establishing and constructing power relations between different actors, and these change constantly. Whoever has the power to

[23] 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.

determine the legitimacy of the practice used by specific groups of people – activists, criminals, governments[24] or website owners – is positioned at the top of the online territory hierarchy, at that particular moment.

[24] This kind of disruption can be used by political actors such as governments and illegitimate small political organisations that seek to reach different goals. Such goals can be: censorship, political disruption, attention, global support for a cause, terrorism, crime, etc. For example, spam-as-service enabled Russian political parties to manipulate, censor and disrupt the trends that appeared on Twitter following the announcement of Russia's parliamentary election results in 2012. Protests that began in Moscow's Triumfalnaya Square started to appear online as pro- and anti-Kremlin parties began to express themselves on Twitter regarding the outcome of Russia's election. But then, 'a wave of bots swarmed the hashtags that legitimate users were using to communicate in an attempt to control the conversation and stifle search results related to the election' (Thomas, Grier and Paxon, 2012: 1).

Conclusion: Producing the ensemble of people and territories

This chapter has discussed all of the theories that have influenced the theoretical approach of this thesis. It started by showing how Foucault's modes of governmentality, and specifically discipline and biopolitics, are guiding the approach to power that is enacted on actions, whether individual or populations. Then, the two key concepts developed in this thesis, which were inspired by sound studies, were explained: *processed listening* and *rhythmedia*. 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 practitioners listen to different sources, with several tools and units, at different times, to produce knowledge. This is an ongoing process that involves **measuring**, collecting, categorising and recording behaviours 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 knowledge is then temporally and spatially ordered through rhythmedia, which **filters** and **trains** people's behaviours, as well as **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 discussed the two key themes of the thesis, which are territories and people. In the first part, I showed why I chose the term territory, a political technology of spatial organisation, 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 corporations and the way they use strategies of territoriality over spaces. I then moved on to legal scholars and software studies scholars and showed how they looked at drawing borders through laws, code, protocol and software. In this section, I amplified how rhythmedia is a better term to use when analysing how people and objects are temporality and spatiality ordered and structured through media. The strengths of this concept is that it allows for an examination of multiple territories, people and objects, but also entails a repetition that neatly fits this feedback loop process. Such repetitions of orderings train people to be produced in particular ways, leading to the second and final part of this chapter, which looks at 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 and its rejection of fixity and essentialism. Feminist technoscience also inspired the key theme of process, and its multiplicities (of practitioners, bodies, territories and knowledge). I do not, however, take its overemphasis on vision as a way to produce knowledge, and instead offer sound, and especially listening, as a better way to think, theorise and conduct research. In this section, I showed how ‘deviant’ behaviours that were categorised as spam, but also flaming, DDoS and hacking were part of media practitioners’ strategies. 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.

In the next chapter, I will outline what is my methodological approach and show which methods I used in each of the case studies.

Chapter 3 – Remixing methods

In this chapter, I present my methodological approach to the theoretical intervention this thesis introduces by using three case studies. Because this thesis draws conceptual inspiration from several disciplines, and each empirical chapter is an amalgamation of some of these fields, this research consists of several qualitative methods. The overarching methodology is taken from Jeremy Packer's (2010) five-steps model that he calls 'realms of inquiry', which a researcher should deploy in order to pursue archaeological excavations of media and communications.

In terms of the empirical and analytical approach, I follow grounded theory (Glaser and Strauss, 1967),[25] which emphasises the examination of processes. In grounded theory, the development of insights, concepts and framework develop as the ongoing collection of data, reading and fieldwork is progressing. As Kathy Charmaz argues, 'grounded theory methods consist of systematic, yet flexible guidelines for collecting and analysing qualitative data to construct theories "grounded" in the data themselves' (2006: 3). This approach breaks away from a linear and prescribed methodology, and rather gives more freedom and flexibility for ideas and theory to emerge and develop as the research takes shape. It is also particularly suited to this thesis as both the theoretical development and research objects are in an ongoing process of production.

The data collected and analysed in this research is assembled from several primary sources, including Bell Telephone archives, policy analysis of EU legislation, discourse analysis of internet standards organisations' technical standards texts and advertising associations' standards documents. This research has also undertaken semi-structured interviews, auto-ethnography conducted on Facebook, and analysis of secondary materials (such as

[25] Glaser and Strauss's pioneering development of grounded theory helped this thesis a lot. They, too, mixed the traditional 'stages' of research and argued for stage-by-stage development of the concepts, theory and ideas, and also, for example, writing the 'literature review' *after* the research has been conducted.

newspapers, blogs, magazines), and what I call ‘platform reverse engineering’ (more details in the following pages). As more data was collected, I compared it to what I already had while thematically batching it into recurring issues in order to make sense of it all.

As each chapter roughly focuses on a different time and territory, there was a need for flexibility and an exploration of methods and the way they inform one another. In short, I needed to see what could give me productive data to make my theoretical and overall argument for the thesis. These insights can be seen in the seven sonic epistemological strategies (see Appendix 1). These were changed, adapted and refined as more data collection and analysis was conducted at each stage of the research. These seven strategies, then, are the red thread that connects all the processes examined in this thesis, and allows the reader to zoom in and out of the thesis as a whole or focus on one particular strategy. Furthermore, two of the main theoretical concepts I developed in this research – *processed listening* and *rhythmedia* – were also conceived in this way. Using sound studies theories along with the data I collected, I was able to develop these theoretical and analytical tools; as I analysed more data, it occurred to me that the modes of listening and concepts of describing ordering that existed were insufficient and needed tuning for the media and communication field.

Moreover, the topic of this research also informed my methods and the way I have written about them. Academic research tends to focus only on the success stories of the research. I believe what did not work, or the data collected that informed the analysis as the research progressed, are just as important and should be discussed. Messiness of research processes should be embraced, not suppressed. Just as spam and noise are considered to be a disturbance to the communication process, I seek to challenge these notions, not only in terms of the subject but also in the way research is conducted. In the following pages of this chapter, I first outline Packer’s methodological model and how it relates to this research. Then, I outline the methods used in each of the three case studies (Chapters 4 to 6) and how I analysed the data I collected.

Jeremy Packer's apparatus model for media history

The knowledge production practices that media practitioners conduct on people and territories are the main focus of this thesis, and Jeremy Packer's model provides a good guideline to examine such strategies. Packer suggests approaching the media and communications archive (in its broad meaning) through a synergy between Giorgio Agamben's (2009) interpretation of Michel Foucault's concept of the *dispositif*[26] and Raymond Williams's cultural analysis of television (1974). Packer asks researchers to 'imagine reading the infrastructure and architecture of media and communication technologies for their power effects, for an understanding of how the movement and mobility of signs, products, and people works to uphold power relations to see how they form and deform subjects' (2010: 94). In that sense, he offers what researchers should listen to when they examine discursive and non-discursive[27] practices.

Packer suggests that thinking through the apparatus in the context of the media and communications archive widens the scope of attention and analysis to include the spatial power relation considerations of objects, architectures, materials, structures and so forth. Packer developed a methodological model that consists of five steps or, as he calls them, 'realms of inquiry' that a researcher should deploy in order to pursue archaeological excavations of media and communications.

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[26] Foucault elaborates on the dispositif, which not only includes the discourse (as in the linguistic arrangements of a specific phenomenon) but also material and immaterial artefacts: 'What I'm trying to single out with this term is, first and foremost, a thoroughly heterogeneous set consisting of discourses, institutions, architectural forms, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral, and philanthropic propositions—in short, the said as much as the unsaid (Foucault, as quoted in Agamben, 2009: 2).

[27] Karen Barad argues that 'Foucault makes a distinction between "discursive" and "nondiscursive" practices, where the latter category is reduced to social institutional practices'. But she points that 'it makes no sense to speak of the "nondiscursive" unless one is willing to jettison the notion of causality in its intra-active conception' (Barad, 2003: 820).

First, Packer suggests looking at what he calls 'determinators', which are organisations, institutions and other experts 'who have been given, granted, or taken the authority to make truth claims regarding specific phenomena' (2010: 100–1). In relation to this dissertation, who creates, manages and enforces the rules for media and communication at different times and territories? Who conducts processed listening and rhythmedia? I call them media practitioners, and they are outlined in Appendix 1. Their power to credentialise and authorise behaviours by using unwanted media categories change the kind of strategies they deploy in each territory examined in this research. Second, Packer suggests one looks at 'statements' used in different discourses that are meant to legitimise the assumptions around a certain phenomenon.

Third, Packer argues that it is important to find the 'competing discourses' because 'the creation of knowledge is always an act of violence against competing knowledge claims and those institutions, disciplines, and individuals who are their promoters' (2010: 101). Fourth, archaeology of media and communications, according to Packer, and as Foucault indicated in his work, looks at the 'materiality' as well as the discourses. That is, the ways in which materiality, architecture and objects function are as parts of the archaeology process of excavation. Finally, Packer argues that one should look at the 'subjectification' process that becomes part of the apparatus of a specific phenomenon. In other words, he points out that one should look at training manuals about the way everyday life should be organised in a specific way and thus 'articulate a vision of a changed subject and an ethos said to be fused with such practices' (Packer, 2010: 102). Such training will be one of the main focuses of this research, as both human and machine train to become a recursive feedback loop that inform each other to maintain the technology's equilibrium. However, this research will look at different types of training manual in the shape of standards texts meant for media practitioners. The way that each of these five realms is applied in each of the empirical chapters will be elaborated below.

Three case studies

I have decided to focus on two main periods: the early 20th century and the early 21st century, which I divide into two periods. These periods signify huge transitions in mass communications technologies inventions and practices, political turbulences (WW2 and various uprising 'springs') and economic crises (the 1930s Great Depression, the dot-com bubble burst and the 2007–8 financial crisis). This methodological procedure has also been deployed by Lisa Gitelman (2006) and Bernhard Rieder (2012), both of whom have focused on two turning points, one in the past and one on the current configuration of the internet. Gitelman explains the rationale behind her methodological focus on two case studies 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 will point to non-linear links that correspond with one another. Focusing on three periods will also allow me to show how media practitioners (re)produce people and territories, while focusing on spam and its earlier configuration as noise, and the way these have been tools that epitomise power relations in each era. Each period is characterised by a different approach to the way media and their architecture are configured and theorised. Each chapter focuses mainly on media practitioners, meaning that, although the determinators stem from media corporations, I also discuss their negotiations, conflicts and collaborations with local authorities (such as Bell Telephone with New York City in Chapter 4), regional authorities (like the digital advertising associations with the European Union in Chapter 5), and global authorities (such as Facebook with other global players in Chapter 6).

The production of knowledge by media practitioners in that sense is always historically located, relational and conflicted with more traditional powers such as states. Nevertheless, as I mentioned in the previous chapter, modes of governmentality are conducted here by media practitioners. So, while media corporations still have to establish and fight for their legitimacy and authority, they usually hold a strong position in constructing power relations. The empirical chapters of this research will focus on three streams of excavation, as detailed below.

Chapter 4 – Noisy behaviours on the line

In this chapter, I analyse Bell Telephone Company's archive by focusing on two of its main journals: *Bell System Technical Journal* and *Bell Telephone Quarterly* (changed to *Bell Telephone Magazine* in 1941). The decision to focus on these archives emerged from Claude Shannon's monumental article, *A Mathematical Theory of Communication* (information theory), published in *Bell System Technical Journal*'s 1948 July/October issue. This theory was revolutionary as it introduced new ways of thinking about information and communication. It was the beginning of digital communication (and computing), which introduced a stable unit – the bit – for transferring information regardless of its content. I argue that this article signifies a conceptualisation of noise, which later took the shape of spam. Shannon was part of the cybernetics movement, which saw the human nervous system and machines as similar systems. Therefore, with his theory, he also proposed new ways of automating parts of communication that previously had been done manually by Bell's female telephone operators. In doing so, he re-ordered the boundaries between human and machine, and presented communication as a statistical process.

Although the imagined audience of these journals was engineering experts, information theory has received worldwide recognition, and has migrated and spread beyond the limited boundaries of engineering experts. Importantly, information theory has been an epistemological foundation for media as an academic discipline, but also represents the construction of power relations through media technologies. Thus, its transformation into new (digital) media

systems such as the internet in the EU (Chapter 5) and Facebook (Chapter 6) also introduced new power relations enabling control and management over mediated territories and their intermingling with humans and machines.

Furthermore, I argue that it is important to analyse these archives, despite the fact that I am not an engineer. The main reason for this is that, if information theory has managed to penetrate, shape and form 'non-technical' discourses, then they are legitimate sites of excavation by 'non-professionals'. These journals are valuable in revealing early statements about unwanted media categories and subjectifications of how they shape people, Bell's telephone operators and spaces. The statements that were analysed in Bell's journals are: specific articles that focus on transmission of information, the terminology used, the measuring tools they developed, the role of the people who work for Bell, and the illustration (graphic) tools that are used to explain such theories.

While reading Bell's journals, I realised that Bell was also involved in a very influential event of measuring NYC at the end of the 1920s and the beginning of the 1930s. The findings were found in a rare book called *City Noise* (Brown et al., 1930), which was written by various interest groups, the determinators of noise at that time. This book and other academic sources on the Noise Abatement Commission show the materiality of NYC and how strategies deployed by these interest groups were meant to change the architecture and commerce of the city.

After the data collection, I analysed Bell's archive and material related to the Noise Abatement Commission using critical discourse analysis (CDA). Michel Foucault's discourse analysis has sparked many versions of academic methodological approaches. One of these is CDA, which is a methodology that derives from linguistic studies and broadens the concept of discourse into a wider definition. One of the prominent scholars in this field is Ruth Wodak (2001, 2002, 2004, 2009), who defines this analytical approach as 'analysing opaque as well as transparent structural relationships of dominance, discrimination, power and control as manifested in language. In other words, CDA aims to investigate critically social inequality as it is

expressed, signalled, constituted, legitimized and so on by language use (or in discourse)' (Wodak, 2002: 2). According to Wodak, there are three main themes that are the focus of this approach: power, history and ideology. This research focuses mainly on power relations but also examines historical events. Consequently, it is suitable for this research (although with less consideration of ideology), and, in fact, it can be seen as a form of archaeology of knowledge. However, it is important to note that this method, since it is derived from linguistics, puts a lot of emphasis on language in its various manifestations. This is indeed *one* of Foucault's objectives in archaeology, but it does not encompass other interests of excavation such as architecture, material objects, infrastructures etc. These will be examined in the following chapters.

Chapter 5 – Weaving people and architecture into the European Union World Wide Web

This chapter jumps several decades after the previous chapter and straight into the dot-com bubble crash around 2000. This was an important period, during which the roles of different actors in the communication process were (re)constructed and (re)defined and, therefore, media categories were crafted along the way. It was a time that, just like information theory, redefined what it means to be human, what communication is and the introduction of new measuring devices and units. This period in the internet's history is crucial as it redefined the way people and territories are mediated and introduced new power relations that needed training. Similar to the early days of other media, it was not clear whether the internet would survive in its commercial model. What this chapter explores is the way media practitioners wanted to make sure the internet succeeded in yielding profit and what strategies they deployed to find a way to fund it.

This chapter focuses on the struggle between EU legislators (mainly the European Commission), advertising associations and internet standard organisations to define communication on the internet, the actors in this

process, how they should operate, how their environments and possibilities of living should be designed and the (unwanted) categories of such events.[28] I chose to focus on the EU because there is a breadth of academic literature about USA legal struggles and internet standards. Specifically, I was motivated to focus on the EU as I saw that Brunton had covered USA legislation in relation to spam and saw that there are fewer academic studies on the EU conceptualisation of spam. It is important to note that the USA and the EU are not detached from one another. Since the Internet Engineering Task Force (IETF) resides in the USA, as do many other internet-related standard bodies, most of these texts still arise from that region. Moreover, some of the EU bodies (especially the European Parliament,[29] the European Council,[30] and, to a lesser extent, the European Commission[31]) are known to be more concerned with citizens' privacy, and this leads to pieces of legislation, namely the 1995 Data Protection Directive and the 2002 Electronic Privacy Directive, which until this day set a high standard for a particular kind of communication on the internet. These reasons make the EU and its conflicts with other determinators an important and interesting case study to look at, even though the other two case studies focus on two big media corporations based in the USA.

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[28] One of the original ideas of this research was to conduct semi-structured interviews with members of anti-spam organisations, specifically Spamhaus and London Action Plan (L.A.P), in order to understand the history of their organisations, how they operate, how they decide on the definition of spam, and with which organisations they choose to collaborate. I wanted to understand how members of L.A.P operate and establish definitions, and rationalise their procedures, legislations and collaborations, which have the power to change the way that people engage with the internet. This direction did not materialise due to a lack of willingness to collaborate with me. Organisations that hold such powerful positions in deciding, structuring, controlling and regulating online behaviour operate in secretive, opaque and, importantly, unaccountable ways.

[29] The European Parliament is the 'law-making body', and has three main roles: legislative, regulatory and budgetary (https://europa.eu/european-union/about-eu/institutions-bodies/european-parliament_en).

[30] The European Council broadly decides on the political direction and actions of the European Union, as well as policies, priorities and strategic interests (https://europa.eu/european-union/about-eu/institutions-bodies/european-council_en).

[31] The European Commission proposes, enforces and implements legislations and budgets, and is politically separated from the European Parliament and the European Council (https://europa.eu/european-union/about-eu/institutions-bodies/european-commission_en).

Legal conflicts with other standard-setting actors seem to escape new media researchers' attention, but deserve a much deeper focus and analysis. Most of new media research focuses on users or the infrastructure of various aspects of the internet. However, by neglecting to account for the laws that make media categories possible forms on the internet, researchers do not show the many assemblages and dependencies with which users and other organisations have to engage and negotiate. Furthermore, following Foucault's notion of the conditions that enable what can be said and done in a particular discourse, it seems cardinal to take into account the determinators: legislative bodies, laws and other actors that structure the way citizens and companies can behave in an online environment and market.

Thus, I analyse various documents that constitute the statements about media behaviours on the EU internet: EU legislation (directives, opinions, recommendations and other documents), Article 29 Working Party (A29WP) opinions, and documents from the Organisation for Economic Co-operation and Development (OECD). These are institutional authorities that are usually responsible for making statements about various societal, cultural and economic sectors, and media and communication is one of these.

I also analyse primary archival materials of internet standards developed by the IETF, and the W3C (World Wide Web Consortium) since these documents serve as statements about how the internet should operate. As I mentioned in Chapter 2, protocols are also a form of law that structures the way people can communicate on the internet. The IETF and the W3C, voluntary non-profit organisations that are responsible for the internet's standards, usually create documents that are meant to function as standards. In that sense, they function as training manuals for media practitioners and, therefore, serve as subjectification for various rules and objects of communication on the internet. As Alexander Galloway argues:

> Computer protocol is a set of recommendations and rules that outline specific technical standards. The protocols that govern much of the Internet are contained in what are called RFC (Request For Comments) documents. Called 'the primary

> documentation of the Internet,' these technical memoranda detail the vast majority of standards and protocols in use on the Internet today (Galloway, 2004: 6).

According to Sandra Braman, internet RFC 'is the process by which the Internet is technically designed, and it is the process through which a new set of practices for policy-making has developed that is already in use in other decision-making communities' (2009). Importantly, Braman argues that, because these documents are written in 'technical' language, they tend to be overlooked by non-experts. These statements are better understood along with the other material analysed in this chapter.

These statements include documents from advertising organisations, which developed standards for measuring people and their behaviours online in order to monetise them and fund free access to services on the internet. Specifically, I analysed documents drafted by the Interactive Advertising Bureau (IAB), the European Advertising Standards Alliance (EASA), and the Federation of European Direct and Interactive Marketing (FEDMA). Such documents have two functions: they are statements that try to authorise and institutionalise the digital advertising position in the EU online market; they are also subjectifications, training manuals that teach and educate digital advertisers on how to standardise their profession, which includes measuring, operating the tools, and using the same units and standards. Only by using similar standards of measuring people on the Web can digital advertisers operate in an efficient way and persuade both legislators and publishers that their position is crucial. Analysing these documents together shows how some protocols and standards are respected while others are not.

By analysing these texts, I examine the conditions, statements and determinators that govern, structure and manage people's subjectification processes in the materiality of the European Union's online territory. As I collected and analysed more data, I started to see that, during this period of communication standardisation in the EU, there was a competing discourse, a form of unsolicited communication that was similar to the way that spam

was framed: cookies. This discovery made me go back to the data collection and examine how cookies developed alongside spam and how legal and commercial discourses managed to structure and distinguish them in a different way, even though they are similar forms of communication.

I also conducted several semi-structured interviews with EU legislators and digital rights activists (see Appendix 2). These interviews helped me in the first stages of the research, to understand who the players are and the main debates. So, despite their words not appearing directly in the thesis, their input contributed to the ongoing development of the dissertation.

Chapter 6 – Engineering the social (media platforms)

In this chapter, I focus on Facebook as one of the contemporary and most dominant media of the (western) internet, which comes in the form of a social media platform (SMP). According to the Faceook's statistics, there were '1.15 billion mobile daily active users on average for December 2016' (Facebook, 2017). According to Pew Research Centre, Facebook is the most popular SMP among internet users, with 72% of online adults using Facebook and 70% who say they use the service several times a day (Duggan, 2015). With the penetration of cell phones[32] into everyday life, Facebook has become another mediated territory where people can perform everyday activities. A large portion of everyday life takes place on SMPs, which opens the possibility that concepts of *life* and *becoming* can take place in these environments.

I find Facebook to fit appropriately with Foucault's concept of *biopolitics*, because it can be seen as the town that he describes in his work (elaborated in Chapter 2). One can see Facebook as a mediated territory where people perform everyday life in an online city, a sort of (im)materiality, where they must identify themselves with their 'offline' identities. Facebook provides the architecture and features that allow people's bodies and subjectivities to be

[32] According to another Pew Research Centre study on technology device ownership, 'Roughly nine-in-ten American adults (92%) own a mobile phone of some kind' (Anderson, 2015: 5).

presented and performed. But these affordances are designed and filtered according to Facebook's rules and rationale and, therefore, shape, structure and manage the way that people can live on its platform.

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 many layers that consist of software, algorithms and code, but also human workers. In addition, these are constantly changing, while some workers are outsourced (as content moderators) so they are not considered technically to be direct Facebook workers. The company also collaborates, purchases and affiliates with many other companies, which makes it difficult to understand how long its tentacles stretch. Because 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), scholars have developed creative ways to examine it. Gerlitz and 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. But while the DMI methods make important contributions to the debates about platforms, and Facebook's conduct in particular, 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.

Tackling some of these obstacles, Skeggs and Yuill (2016) developed several methods and tools to 'get inside' Facebook, and challenge the platform's self-description of 'social-network'. Importantly, they used rhythmanalysis as a way of understanding the relations between different elements, and specifically 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. But, although similar to this research, they argue that Facebook is an epistemological platform that is performative, they focus mainly on 'lifeness', a term borrowed from Kember and Zylinska (2012). Therefore, they do not

account for the way the divisions between rhythms of 'life' and rhythms of 'non-life' have been rationalised, constructed and negotiated. In addition, some actions, rhythms and interactions are silent but still count and have value.

A scholar I derive inspiration from in terms of innovative methods is Taina Bucher (2012c), who developed several techniques in her dissertation, which she calls *technography* and later develops even further. According to Bucher, her method 'is a way of describing and observing technology in order to examine the interplay between a diverse set of actors (both human and nonhuman)' (2012c: 69). Bucher tries to see how the software operates and, therefore, focuses on its affordances; but, at the same time, she also engages with people using more 'traditional' ethnographic methods such as interviews and observation. In doing so, she emphasises the need to focus on the way the software structures people's behaviours by following its mechanisms as closely as she can, without neglecting the 'human' aspect, trying to obtain richer data about platforms.

In order to collect richer and more diverse types of data to understand how Facebook functions, I used five qualitative methods. This, I believe, helps uncover (some of) the opaqueness of Facebook and provides various aspects of its functioning that do not involve either its non-human or its human actors: it accounts for them both. First, following Bucher's (2012) technography method, I conducted an auto-ethnography on my newsfeed to see the materiality of how the newsfeed orders my experience by examining how often the Top Stories and Most Recent preferences change. Second, I catalogued different term of use sections for one year to understand to examine what kinds of statement Facebook makes, and how various definitions and explanations change over time. Third, I developed a method called 'platform reverse engineering' and analysed Facebook's academic research. This method helped me understand both its statements about its rationale and various components of the materiality of its architecture and features, and how the company wants them to affect the subjectification of its members and affiliates. Fourth, I followed several pages that Facebook uses to announce news about its platform, and shares different statements about

its current and new features. Finally, I analysed specialist technology websites, which provided in-depth understanding about statements that Facebook did not make but that influenced the way it functions. Each of these methods is explained below.

For the first method, I followed Bucher (2012a), who explored EdgeRank, Facebook's newsfeed algorithm that orders objects and people. In order to understand how ordering and selection is done on Facebook's newsfeed, she conducted a small experiment over a period of two months during 2011, using her own Facebook profile[33] to compare contents of her newsfeed preferences. She compared the *Top News* and the *Most Recent* sorting options on Facebook's newsfeed, while taking screen shots of the posts. In the first stage of the data collection, I conducted a similar experiment in order to understand the materiality of Facebook.

For the second method, I analysed different options, categories and guidelines that Facebook offers, taking screen shots of them every two weeks starting from October 2013 until November 2014 and archiving them in PDF files. The sections I focused on within Facebook's terms are: Facebook's Community Standards; Facebook's (Social) Reporting; newsfeed sorting categories and options of managing the forms of information that appear on the newsfeed; Timeline; Newsfeed (Privacy, Commenting, Sharing); Facebook's Platform Policies; Facebook's Rights and Responsibilities; Facebook's Data Use Policy; Government's Reports; Security (Spam, Phishing, Malware, Adware, Hacked Accounts) and Facebook's advertising guidelines (Ad & Sponsored Stories Community Standards, Best Practices, Facebook Ad Tracking Policy).

While collecting data, and following the grounded theory approach, I took 'field notes', which helped me to think about and develop my analysis. Furthermore, since Facebook regularly changes so many features and the interface design, I also took screen shots (kept as PDF files) in order to keep

[33] This allows the researcher to avoid ethical issues concerning the use of other people's Facebook accounts.

track of various changes, features, functions and options that were not foreseen and which I thought might be important for this research. This fits with Foucault's archaeological notion of the conditions of 'what can be said and done' in a given discourse. Therefore, documenting the changing processes of Facebook's territory allowed me to examine which options, functions or features are being included, changed or removed. These mutating shifts showed the motives and rationale of the platform's owners and, consequently, allowed me to understand how Facebook adjusts itself and its users' online living environments.

This kind of documentation allowed me to follow transitions in Facebook's statements about architecture, definitions and changes in policy. Such documentation points to the kinds of filtering and categorisation mechanism offered and which are imposed by the platform. This allows a closer examination of the materiality it offers or constrains, and what can be seen, said and done on Facebook: how the digital body can 'live' (present itself, behave, express itself) within this territory. By this, I want to show the materiality of the implications and consequences of the categorisation of different forms of information in a specific architecture on people's everyday (digital) lives.

As the research evolved, I realised that this data was not enough. I needed more information to understand the way that Facebook develops its architecture and how it conducts *processed listening* and *rhythmedia*. Susan Leigh Star discusses the ethnography of information systems, or 'studying boring things', as she calls it, and provides tricks to 'reading' infrastructure. For example, she suggests identifying master narratives in information systems and surfacing invisible work by 'looking for these processes in traces left behind by coders, designers, and users of systems' (1999: 385). Therefore, in the second stage of the data collection, I turned to other sources that helped me to assemble a richer dataset that can illuminate some of the initial data collection insights.

For the third method, I developed a method I call 'platform reverse engineering',[34] meaning that I read texts, such as patent documents or academic articles, published by Facebook. Reverse engineering can be conducted on hardware as well. However, in this context, I refer to software and the attempt to analyse and identify its components and functions. As Chikofsky and Cross define reverse engineering, it is 'the process of analyzing 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). The kind of software that Facebook and other SMPs offer is usually black-boxed, meaning it is not possible to know how the software works because researchers do not have access to the protocols, algorithms or employees who work there due to proprietor and copyright issues. So, in order to get a sense of how the software works, there is a need to go to the 'back end' of the software in other ways.

By 'reverse engineering', I mean that I do not read articles in the 'usual' way I read academic articles. I analyse these articles by searching for particular information that can help reveal the way the platform develops its functions. In particular, I ask: what is the rationale that guides the research? Which tools and methods do the company researchers use? What other assumptions and interpretations do the researchers express in the text? How do they conceptualise the platform and its users? What kind of ethical considerations, if any, do they convey? In this way, software and algorithms can be examined and described in an abstract way with as much detail as is available to the researcher. This also points to its shortcoming, because this method still cannot capture, describe or account for all the discussions, negotiations and elements of the software that involve different parts of the organisation such as managers, engineers, designers and onto financial agreements and regional laws.

[34] Robert Gehl also uses a similar method, which he terms 'critical reverse engineering'; this is 'a method of producing knowledge by dissociating human made artifacts. This knowledge is then used to produce new artifacts that simultaneously improve upon the old and yet also bear a relation to the old' (Gehl, 2015: 148)

This ‘reverse engineering’ method is important and useful because many media and communications scholars find it difficult to gain access to SMP companies’ internal documents or to interview their employers. In this way, these companies’ rationales regarding their software, algorithms, architecture designs, and economical and political influences are left ‘black-boxed’ and extremely difficult to research. Facebook’s academic research archive can be found in a special section: https://research.facebook.com/publications/. Facebook operates its own research centre that employs in-house researchers to conduct various kinds of research that is then published in peer-reviewed journals, just like any academic research.

Facebook’s research archive consists of over 200 articles (as of September 2016), and it was first started in 2009. It has eleven types of research stream: connectivity, systems and networking, computer vision, data science, economics and computation, human computer interaction and UX (user experience), natural languages processing and speech, security and privacy, and virtual reality. Scanning all the articles, my selection criteria focused mainly on the research clusters of security and privacy, systems and networking, data science, and human computer interaction and UX. I analysed only the articles that seemed relevant to this research. Their contribution is significant as the company’s researchers have far-reaching power to access the architecture and users. This ‘archive’ can also shed light on the motives, interests and rationale that stand behind the company. It also shows the methods Facebook uses to analyse people’s behaviour within its territory.

For the fourth method, I conduct an analysis of announcements that Facebook publishes in different sections: Facebook’s News Room and Security sections, which announce new features or other news that can provide information on the company’s conduct. Finally, for the fifth method, I analysed ‘technology’-focused websites such as Wired, Mashable, The Verge, Tech Crunch, Gawker, Readwrite, Buzzfeed, Tech Dirt, and The Hacker News; specialist blogs such as Facebook’s Newsroom; and technology sections in the *New York Times*, *The Atlantic*, *Forbes*, and *The Guardian*. These texts enabled a more critical approach to the kind of

statements that Facebook does not publish because it wants to remain concealed. Analysed together, these five methods provided a rich and diverse dataset that represents various aspects of Facebook as a media company and how it operates, which tools it develops, and why and how it changes its territory and the way it perceives its users and employees.

It is important to emphasise that there are other factors that influence behaviours, such as the way people engage and negotiate with media technologies, which creates different social norms (Kant, 2015; Bucher, 2016; Kennedy et al., 2016). Examining these directions, Kant (2015), Bucher (2016) and Kennedy et al. (2016) usually conduct interviews or observe how people negotiate their identities and behaviour with technologies by observing how they use these platforms and having them explain their behaviours while they are doing so. Although these kinds of method can lead to productive insights, I decided to focus on texts that were produced by the determinators in order to understand the statements and materiality development of Facebook's architecture. In terms of the subjectification, I used auto-ethnography, which has its own shortcomings, especially when internet services aim to be more personalised. There are also the behaviours of automatic bots, which might be bought interactions or satirical bots (Baym, 2013; Gehl, 2013; Bucher, 2014). These are also forms of behaviour in media that shape territories; however, these are not the focus of this research.

Ethical consideration

The main disadvantage of using my own Facebook account is the fact that it adjusts itself according to my patterns of usage; therefore, things that occur on my Facebook might not happen on other people's Facebook because their identities and usage practices are different to mine (because they are of different genders, countries, ages, preferences, celebrities etc.). This has been crystallised in a small change in my usage pattern, which occurred for

one week in mid-March 2014, when I did not login to Facebook every couple of hours but every couple of days. The apparent change in the findings was that the newsfeed sort changed *every time* I logged into Facebook from *Most Recent* to *Top Stories* against my wishes, rather than every couple of days. Nevertheless, the advantage of avoiding the ethical and access issues of using other people's Facebook accounts, as well as the assumption that terms of use change in all users' accounts regardless of patterns of usage, made this method favourable despite this shortcoming.

Now that the theoretical and methodological sections have been outlined and explained, the ensemble is prepared for the three case studies, which will show how *processed listening* and *rhythmedia* are conducted in three different but interrelated case studies.

Chapter 4 – Noisy behaviours on the line

Introduction

This chapter examines the way media practitioners produce subjects and territories by using spam's earlier configuration: noise. The chapter examines the two decades that preceded Claude Shannon's information theory (IT), which was published in 1948 in the *Bell System Technical Journal*. IT 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. However, this chapter examines the events that preceded IT in order to understand the evolution of the concept of noise. This is not to assign the causal effects of these two events, but rather to create the histories of the subjects, as Foucault argues (1982: 777). In this case study, noise is used to produce subjects.

The two events that will be discussed in this chapter are: first, the Noise Abatement Comission (NAC), which conducted a **measurement** of New York City (NYC), and produced the report *City Noise* in 1930.[35] This committee collaborated with Bell Laboratories, which served as **experts** using special **measurement** equipment – the audiometer and the noise meter[36] – and a measurement unit – the decibel – in order to measure various sources in NYC using quantitative devices. Second, the 1930s and 1940s training programmes Bell developed for 'good telephone usage', mainly aimed towards its female telephone operators.

In this way, this chapter will show how Bell established its powerful position by listening to the behaviours of people in NYC and its telephone operators. This listening capacity enabled Bell to know people across NYC and also its

[35] The NAC actually produced two reports (Bijesterveld, 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.

[36] These are similar to the eudiometer, which was designed in the 18th century to measure air (Corbin, 1986: 15). This device helped the evolving pneumatic chemistry science.

female employees inside *and* outside the workspace. Such strategies, then, transduced both people and spaces through their measuring tools and units into particular subjects and territories. In NYC, Bell's noise map helped to spot problematic noisy groups of people and practices, usually conducted by immigrants such as African-Americans, Jews and Irish. Developing measuring devices and standardised units helped Bell and the NAC to create a normal curve of normal people and abnormal noisy ones and relate their associated practices to irregularities that should be controlled and eliminated.

Measuring the city also helped Bell to construct what it saw as noisy spaces in order to **restructure the territory**. The main goal was to turn various spaces across the city towards commerce-orientated activities. But first it was necessary to define the people and behaviours that interfered with that goal as noisy. These included street commerce or unauthorised house parties, and also no-unions protests, which were usually conducted in Union Square. Thus, the re-designing of NYC's architecture facilitated by the NAC was meant to **de-politicise** places traditionally used for protest and turn them into trade territories. At the same time, Bell's listening capacities enabled it to develop other business endeavours; this authorised its conduct and gave it a **license** to consult people through its acoustic consulting service to help people create territories that were protected from noise. In this way, Bell sold the service of keeping people safe and healthy with specially built architectures.

The second event focuses on Bell's flagship training programme for its switchboard telephone operators, called *A Design for Living*. Here the media corporation expanded the scope of its listening by penetrating the operators' bodies and minds inside *and* outside the workplace. These **training of operators' bodies** programmes were meant to turn the telephone operators into efficient and fast machines, destabilising the boundaries between humans and non-humans. Because Bell saw the operators as pleasing machines, the aim of these training programmes was to **filter** the telephone system's malfunctions: filtering the noise. The operators would make sure the telephone system would maintain equilibrium by conducting the emotional

labour of soothing unsatisfied subscribers and acting as engineers to fix the apparatus and infrastructure.

De-politicising was done through special **training** programmes developed by Bell that were intended to optimise its telephone operators' behaviour. The media company gave the operators two controlled listening abilities: listening to their colleagues during their work shifts to conduct quality assurance of their service, and giving counselling sessions to rebellious workers. In these ways, Bell operators were expected to educate and train their peers in the correct way of behaving.

These events show the way Bell, sometimes in collaboration with other interest groups, was in a constant process of producing its inventions and services and, along the way, new subjects and territories that fit its business model. As these events came two decades before Shannon's IT, they provide historical grounds for the sonic epistemological construction of people and territories through sound and noise. This chapter will show how modes of governmentality, specifically discipline and biopolitics, constructed 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 behaviours, as well as re-ordering and re-shaping NYC. In other words, the following pages will show how noise was instrumentalised in the early 20th century, and how these developments point to similarities and correlations with how spam is instrumentalised in the early 21st century, as the following chapters illustrate.

City noise: The Noise Abatement Commission in the early 20th century

The industrialisation 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 fabric of the city and

the home came noise, which became a tool used to reconstruct territories and reproduce people. Noise as a distinct category was used to represent, manage and control unwanted sectors of society and forms of unwanted behaviour. Demarcating such a distinction was also meant to legitimise people, practices and areas as the appropriate 'sound' for this territory. In order to understand how noise was utilised by Bell, this section focuses on the NAC, which was formed in 1929, and its involvement with Bell Labs.

On 1 January 1925, the American Telephone and Telegraph (AT&T) and its subsidiary Western Electric (which was the manufacturing company of all telephone and radio equipment) incorporated to form Bell Telephone Laboratories. For many years, Bell Labs was a monopoly in the creation of media technologies and the standards that concern them. This standalone company was meant to be more efficient since having two engineering departments (AT&T and Western Electric) was a waste of resources. Jon Gertner (2012) explored the evolution of Bell Laboratories and 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). As this chapter will show, Bell not only investigated but also constructed people and its workers in new ways through the devices it developed. Such devices enabled it to listen to bodies and then measure and configure them as healthy or noisy.

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, who was also the wife of the publisher and rich 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, brought by congressman William Bennet, who designed this federal legislation against 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 the New York's increased immigration that Mrs. Rice's efforts started to yield fruits and reach headlines.

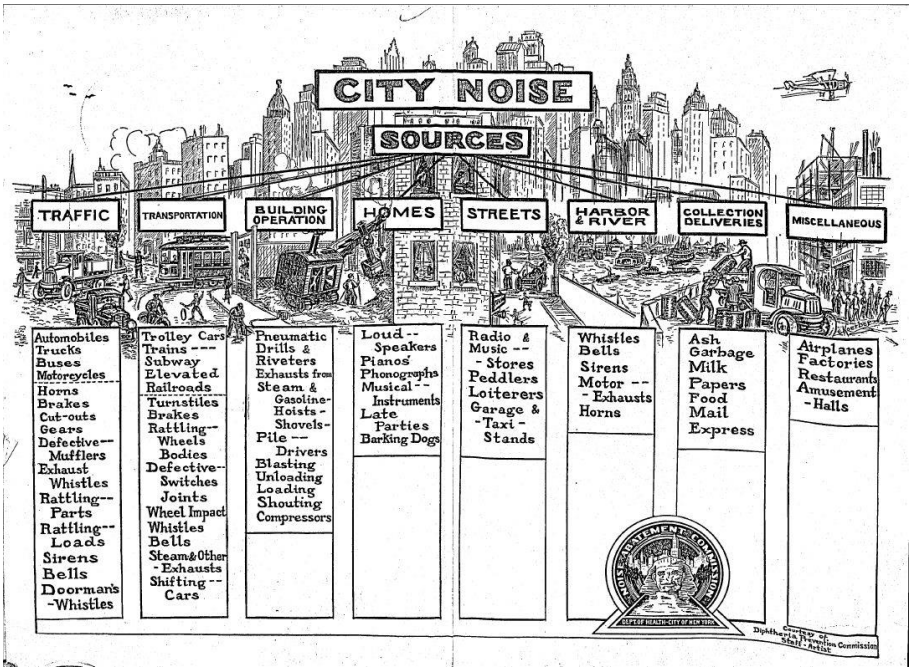


Figure 1: City Noise (Brown et al., 1930: 306).

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 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; President of the Johns-Manville Corporation,[37] Lewis H. Brown; and the police. Another major actor in the NAC was the president and founder of the Bell Laboratories research centre, Dr. Harvey Fletcher, who was also the president of the Acoustic Society of America, and fellow of the Organisations for the Hard of Hearing. The collaboration with Bell Labs might seem strange at first, mainly because many of its inventions are part of the source of city noise: telephones, radio loud speakers etc. However, as Emily Thompson (2004) observes:

[37] 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.

> 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).

It was not quite an attempt to ‘eliminate all things unnecessary’, as Thompson argues, but rather the reorganisation and production of more efficient and, importantly, more economical things. It is important to have 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 corporations but towards the citizens of the city and their ‘uncivilised’ behaviour. 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).

Bell also conducted the **measurements** according to the times of the day that people made most calls, which were determined by a telephone traffic study conducted earlier. In this way, Bell measured the city with its devices according to its units, and gained knowledge about people and spaces. It created a database, statistically mapping the city’s soundscape across spaces and times and establish which ones will be categorised as noise. This

then could be used to **filter** sounds in NYC that interfered with its interests of efficient transmission, created by both humans and non-humans. This statement points to the way Bell Labs produced knowledge by defining what noise is. As can be seen in an article that was based on some of the measurements made as part of the NAC operation:

> 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 quantify and understand what the sources were that interfered with the telephone system. In particular, it wanted to know the place and time they occurred to determine changes of sound – a statistical measurement of behaviours measured using its devices and units, which could help it to identify irregularities. Thus, any sounds, behaviours or activities that could potentially hinder transmission of conversations on the telephone were categorised as noise. However, not all sounds and activities were classified as noise, and the selective process of producing different sounds and behaviours had its own politics. In this way, several interest groups managed to restructure and transduce NYC according to new technologies and measuring units, while presenting them as 'objective'.

Bell Labs used its new unit of measuring sound, called the *decibel*, 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 involved the human ear, a Bell's engineer **expert** known as 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, which then corresponded to a curve called the noise audiogram, which he observed and reported.

When comparing the two methods, Bell experts argued that '[t]he 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, the **experts** reflected on the efficiency of each measuring device, while emphasising that the more automatic one, the one with less human intervention, was more accurate but still had some problems with accuracy, thereby necessitating another measuring method.

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). So, the same device was used for **measuring** the 'bodies' of both the city *and* the people in order to determine abnormalities. For both measuring instruments, Bell **experts** had to know, operate and interpret what they listened to. To maintain accuracy, only one Bell engineer measured with each device. Importantly, they rendered the city's sounds along with people's behaviour 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); however, in the City Noise report, it was portrayed as a unit of loudness (Brown et al., 1930). This unit is a quantification of the ratio of intensities, and does not represent an absolute

unit. This relativity was established by the positioning of the audiometer's microphone towards the desired source of sound and the interpretation of the readings 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. Moreover, measuring was arbitrary and relied completely on the way the Bell **experts** interpreted and recorded the data.

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. Importantly, 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). By doing so, 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**.

Bell's measuring unit, as well as Facebook's Like button, which will be examined in Chapter 6, enables media corporations to produce people's and object's behaviour according to what they consider to be 'social'. By doing so, they hold a powerful position in producing and ordering people and territories. Although the decibel faced competing measuring units at the time, such as the *sone*, the *wien*, and its strongest competitor, the *phone*, Bell managed to surpass these. As Bijsterveld argues:

> Research institutions had taken the ICA's[38] 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,

[38] International Committee on Acoustics.

> 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 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 could be seen as another way to promote their measuring unit as the dominant standard. It also helped establish the company as the main authority, thereby promoting its other businesses, which will be covered below. Further, Harvey Fletcher's strategic position in the Acoustic Society of America, and fellowship of the Organizations for the Hard of Hearing probably helped to standardise Bell's decibel unit over the other measuring units.

Mapping city noise

As mentioned in Chapter 1, in the 18th and 19th centuries, strategies of governmentality on air in French and American cities were deployed in order to produce classes of odours, populations and territories. This was done using the technologies of pavements, drainage and ventilation, which made the city's circulation of goods and people more efficient. It also drew a line between morality and healthy bodies. As Alan Corbin argues, 'olfactory[39] 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. But at the time the sociological project remained somewhat indeterminate. The

[39] The sensory system used for smell.

> urgency of the dangers revealed by the confused mixtures of odors from earth, water, excrement, corpses, and living bodies hampered analysis. 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 with specific technologies and measuring units was also conducted in NYC, a century before the NAC. Melanie Kiechle discusses the 19th-century sanitary reformers in the US. On 26 February 1866, a new public health law was passed in NYC that founded the NYC Metropolitan Board of Health. This board created a stench map of New York and Brooklyn's offensive trades, trying to locate the sources of the nuisance and move them somewhere else. As Kiechle argues:

> Some efforts aimed to bring fresh air into cities through the creation of public parks[40] and wide boulevards for circulation. Alternative approaches pushed stenches 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 stenches' 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*

[40] Kiechle observes that, in 1851, New York City's mayor, Ambrose Cornelius Kingsland, proposed a People's Park, which took inspiration from European cities, and argued that what American cities needed were 'breathing zones' in the form of public parks, in order for citizens to enjoy fresh air. This initiative was adopted in 1853, and ultimately led to the building of Central Park.

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, detailed and precise map of odours. The **experts** at that time were building new technologies for water systems (including water pumps), sewers and canals that sanitised both the water and the air. Only **experts**' opinions would matter in legal settings, argues Kiechle, and NYC's Metropolitan Board of Health administered 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 legitimised specific people, commerce, places, technologies and behaviours while delegitimising 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 in order 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

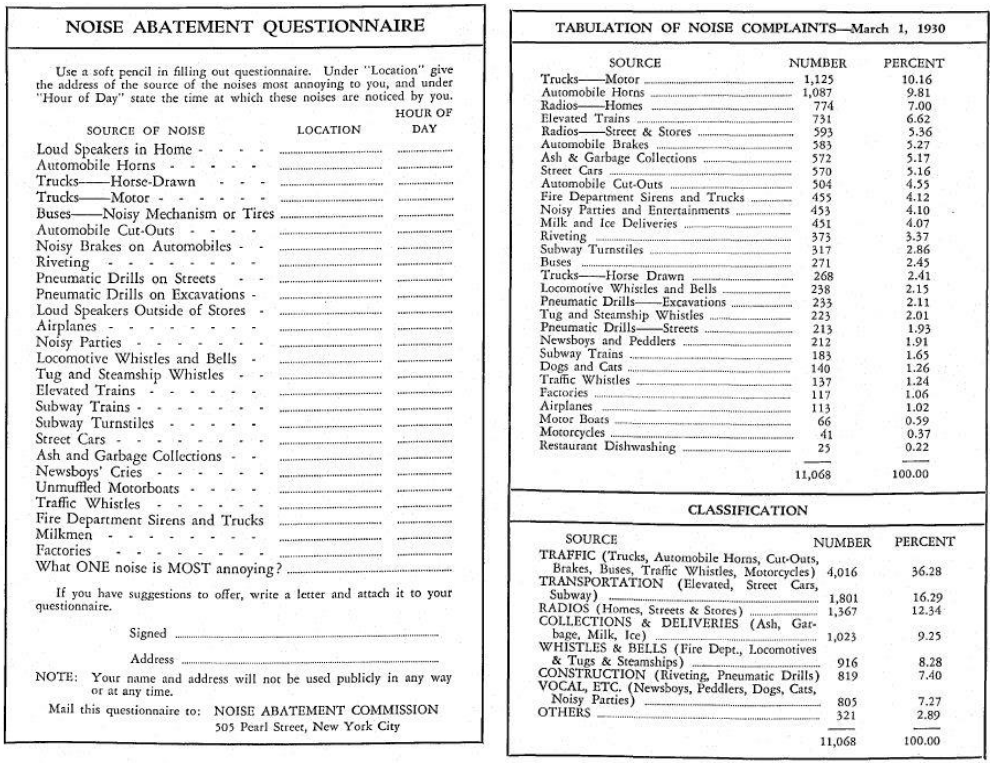
> reasonable inevitable noise and unreasonable noise (Brown et al., 1930: 3–4).

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 shows above regarding maps, these were political strategies to produce territories. Such visualisations and quantification of the city's noise and the places where it occurred made it easier to restructure people and the architecture 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 in order to do that. As Karin Bijsterveld argues, such practices of zoning were also starting to take shape in pushing for the creation of different territories for trade and industrial activities and territories for quiet living.

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 it was needed in the city. It was also the time of the stock market crash that resulted in one of the biggest financial crises of the 20th century, and which rattled many people and companies. It required a reorganisation 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).

In order 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 forms back. As can be seen in Figure 2, the questionnaire gave a predetermined list of sources that produced noise; therefore, 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. Also, 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.



NOISE ABATEMENT QUESTIONNAIRE

Use a soft pencil in filling out questionnaire. Under "Location" give the address of the source of the noises most annoying to you, and under "Hour of Day" state the time at which these noises are noticed by you.

SOURCE OF NOISE	LOCATION	HOUR OF DAY
Loud Speakers in Home		
Automobile Horns		
Trucks——Horse-Drawn		
Trucks——Motor		
Buses——Noisy Mechanism or Tires		
Automobile Cut-Outs		
Noisy Brakes on Automobiles		
Riveting		
Pneumatic Drills on Streets		
Pneumatic Drills on Excavations		
Loud Speakers Outside of Stores		
Airplanes		
Noisy Parties		
Locomotive Whistles and Bells		
Tug and Steamship Whistles		
Elevated Trains		
Subway Trains		
Subway Turnstiles		
Street Cars		
Ash and Garbage Collections		
Newsboys' Cries		
Unmuffled Motorboats		
Traffic Whistles		
Fire Department Sirens and Trucks		
Milkmen		
Factories		
What ONE noise is MOST annoying?		

If you have suggestions to offer, write a letter and attach it to your questionnaire.

Signed .....

Address .....

NOTE: Your name and address will not be used publicly in any way or at any time.

Mail this questionnaire to: NOISE ABATEMENT COMMISSION
505 Pearl Street, New York City

TABULATION OF NOISE COMPLAINTS—March 1, 1930

SOURCE	NUMBER	PERCENT
Trucks——Motor	1,125	10.16
Automobile Horns	1,087	9.81
Radios——Homes	774	7.00
Elevated Trains	731	6.62
Radios——Street & Stores	593	5.36
Automobile Brakes	583	5.27
Ash & Garbage Collections	572	5.17
Street Cars	570	5.16
Automobile Cut-Outs	504	4.55
Fire Department Sirens and Trucks	455	4.12
Noisy Parties and Entertainments	453	4.10
Milk and Ice Deliveries	451	4.07
Riveting	373	3.37
Subway Turnstiles	317	2.86
Buses	271	2.45
Trucks——Horse Drawn	268	2.41
Locomotive Whistles and Bells	238	2.15
Pneumatic Drills——Excavations	233	2.11
Tug and Steamship Whistles	223	2.01
Pneumatic Drills——Streets	213	1.93
Newsboys and Peddlers	212	1.91
Subway Trains	183	1.65
Dogs and Cats	140	1.26
Traffic Whistles	137	1.24
Factories	117	1.06
Airplanes	113	1.02
Motor Boats	66	0.59
Motorcycles	41	0.37
Restaurant Dishwashing	25	0.22
	11,068	100.00

CLASSIFICATION

SOURCE	NUMBER	PERCENT
TRAFFIC (Trucks, Automobile Horns, Cut-Outs, Brakes, Buses, Traffic Whistles, Motorcycles)	4,016	36.28
TRANSPORTATION (Elevated, Street Cars, Subway)	1,801	16.29
RADIOS (Homes, Streets & Stores)	1,367	12.34
COLLECTIONS & DELIVERIES (Ash, Garbage, Milk, Ice)	1,023	9.25
WHISTLES & BELLS (Fire Dept., Locomotives & Tugs & Steamships)	916	8.28
CONSTRUCTION (Riveting, Pneumatic Drills)	819	7.40
VOCAL, ETC. (Newsboys, Peddlers, Dogs, Cats, Noisy Parties)	805	7.27
OTHERS	321	2.89
	11,068	100.00

Figure 2: Noise Abatement Questionnaire, City Noise (Brown et al., 1930: 25, 27).

According to the classifications presented in the questionnaire's results (right side), 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 only 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 creating the noise, therefore, was placed on the lower social classes or foreigners who needed to be educated and governed. 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 in order to decrease noise, but their control or elimination was never raised as a policy issue.

Further, 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 already established as noisy. By doing so, this enabled it to finally have a tangible number-based 'scientific' proof that would consequently help to form legislations and control over these noise sources and practices, be they human or non-human. This was important since it was finally possible to 'capture' noise, as an immaterial, elusive form of knowledge, from its abstract slipperiness by (Bell's) quantitative **measurements** and mechanical tools, and then use it against different groups and behaviours 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. But people had to be educated on the kinds of noise they should care to complain about. Even in this example, although automobiles sounds were considered unnecessary, their manufacturers did not receive sanctions, particularly because they were part of the group of sponsors of the NAC. Instead, other sources, groups of people and their activities were the target and had to be categorised as noise that was more

annoying. As 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, 2001: 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 that of teaching the population that noise was unhealthy, dangerous and inefficient. This also shows that, actually, not all people were aware that they should care about noise; therefore, the commission felt it had to guide them to reach this understanding. 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.

Noise as a health problem

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). Therefore, people had to **train their bodies** and self-care while monitoring their peers in order to be healthy and clean. Just like 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, nevertheless, 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).

This observation shows that, because it was difficult to link physical and psychological damages to the noise **measurements**, all noises were important, thus justifying the kind of action undertaken by the NAC. An even greater power was given to it by not having to justify or ground these arguments with actual proof. For example, the report makes a weak connection between children’s accidents and deaths that happened in the streets to their confused mental state caused by the multitude of sounds. 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 potentially harmful.

The discussions were mostly about the effects of noise on the efficiency of 'brain' or mental workers. This meant that noises aimed at the higher classes were constructed as unnecessary. Other people who were doing more physical work in factories and were exposed to strong sounds were not presented to be in such a danger thanks to the construction of the noise that they were exposed to as not 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 street commerce. It was an opportunity to restructure the new labour force according to the new emerging market that the Industrial Revolution introduced.

Constructing (un)fair trade

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 in order 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 space's private and public territories. 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 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).

Despite the SSUN's obvious attack on less-privileged people, it was important for Mrs. Rice to emphasise that 'this movement is not for the relief of the rich, for the poor will benefit by it fully as much as, if not more than, those who can leave the city whenever they wish' (Rice, 1906: SM4). 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 examined peddlers and merchants in

NYC between 1890 and 1940, and argues that proposals to prohibit merchants from the street were inspired by the ideal notion of a frictionless transportation in the city, where (poor) people on the street interfered with the growing presence of automobile traffic. But a 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 suggests, 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.

This is demonstrated by the fact that sound was permitted only in specific 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 constructs different temporalities, 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. As Attali observes in relation to Muzak:

> This music is not innocent. It is not just a way of drowning out the tedious noises of the workplace. It may be the herald of the general silence of men before the spectacle of commodities, men who will no longer speak except to conduct standardized commentary on them (Attali, 1985: 112).

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. One can see this strategy as a way to combat machine noise by introducing another specially designed and scientifically examined sound. Furthermore, Jones and Schumacher (1992) suggest that Muzak was a method of re-organising time in factories that created a feeling of movement with the music but restricted and controlled the bodies of the workers. Thus, Muzak was a way to conduct rhythmedia to produce factories that were efficient labour territories. 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).

In other words, the ordering of different sonic spaces was part of rhythmedia's way to re-organise and restructure labour and trade and produce new and more efficient territories and bodies. Muzak signified a desire to control the efficiency of people in spaces, to push them to become productive workers and consuming subjects through a social engineering of their bodies and minds. As David Hendy describes in his excavation of noise:

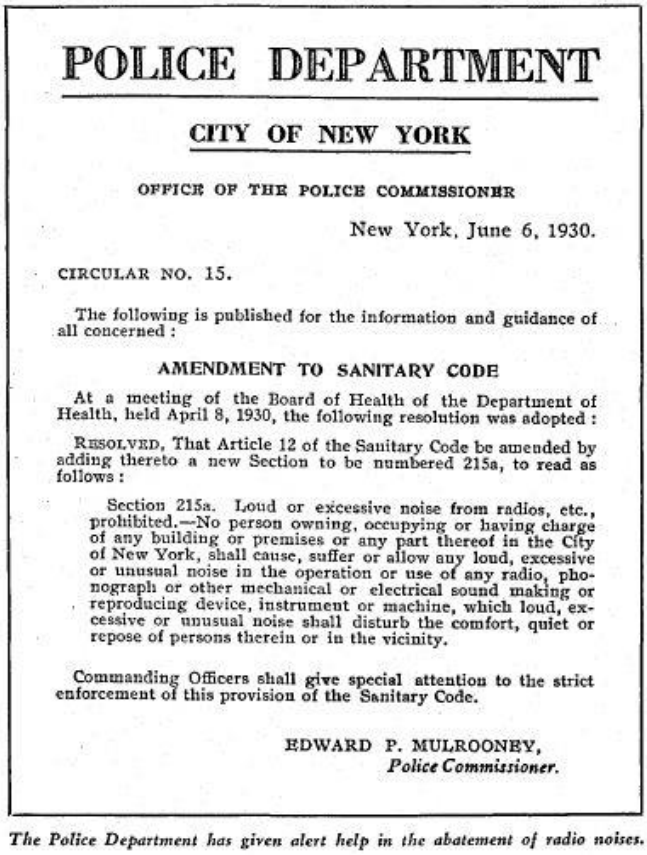
> [B]ackground music quickly became one of the defining sounds of the twentieth century: the sound of music as a complement to modern urban life, heard in shopping centres, cafes, offices, hotel lobbies and lifts … When Empire State Building opened in New

> York in May 1931, music was piped into all the elevators, lobbies and observatories (Hendy, 2013: 296).

However, even when some merchants did have stores, the way they chose to advertise their products, i.e. putting loudspeakers on the street in order to call attention to their business, was criticised and attacked. This was not part of the NAC's goals for the new organisation of the city soundscape. Radio noises enfolded 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 rights; who had the right 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*:



POLICE DEPARTMENT

CITY OF NEW YORK

OFFICE OF THE POLICE COMMISSIONER

New York, June 6, 1930.

CIRCULAR NO. 15.

The following is published for the information and guidance of all concerned :

AMENDMENT TO SANITARY CODE

At a meeting of the Board of Health of the Department of Health, held April 8, 1930, the following resolution was adopted :

RESOLVED, That Article 12 of the Sanitary Code be amended by adding thereto a new Section to be numbered 215a, to read as follows :

Section 215a. Loud or excessive noise from radios, etc., prohibited.—No person owning, occupying or having charge of any building or premises or any part thereof in the City of New York, shall cause, suffer or allow any loud, excessive or unusual noise in the operation or use of any radio, phonograph or other mechanical or electrical sound making or reproducing device, instrument or machine, which loud, excessive or unusual noise shall disturb the comfort, quiet or repose of persons therein or in the vicinity.

Commanding Officers shall give special attention to the strict enforcement of this provision of the Sanitary Code.

EDWARD P. MULROONEY,
Police Commissioner.

The Police Department has given alert help in the abatement of radio noises.

Figure 3: New York City's Police Department's Amendment to Sanitary Code (Brown et al., 1930: 199).

Here we can see an emphasis on excessive and unusual noise, whereas it was difficult to establish how these would be determined and by whom. 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 sound 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. In a special article for the *New York Times*, the Health Commissioner of NYC, 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 realised 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. He emphasised that biopolitics is achieved not only by governmentality of a population but also by the continuous monitoring of one's peers. Thus, the **training of bodies** in the city was enacted by the authorities and the citizens themselves in order to produce disciplined citizens subjects. In this way, the citizens would be 'empowered' to police noisy behaviours and groups of people that interfered with businesses. This can be seen 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 that citizens were encouraged to police and threaten their peers when they 'violated' noise laws. It shows how training was important to change the public's opinion regarding what was unnecessary noise to encourage people to act and educate others. This was emphasised 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. This could be achieved, among other techniques, with education. The police would give a $5 fine for the violation of such offences in order to educate through an immediate punishment, which they believed would deter more powerfully than harder 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 22:30, reminding people not to annoy their neighbours and to curb the volume.

This campaign, along with the other educational programmes that the commossion set forth, were **training programmes** for people to know and 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 did not burden or produce excessive noise.

The urban soundscape was 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 unions' demonstrations and rallies, such as 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 feared. Therefore, there was an attempt to **de-politicise** 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 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 continues by arguing that, in the age of the New Deal, the need for a visible civic centre 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). But, of course, crowding that occurred in the big retail stores was allowed, and even encouraged. In this way, a specific kind of crowding was produced as the legitimate rhythm, while the others were prohibited. This, again, was a strategy that was deployed in French cities, what Alain 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 behaviour had to be changed, especially those spontaneous practices of mass gatherings that were conceived as particularly dangerous. There was a need for less chaos, more uniformity, reproducing a new body, a civilised self-monitoring body that at the same time monitored its surrounding, that would be more suitable to the new city.

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 uncivilised, services and products that could prevent or decrease it were sold. 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 specific human characteristics and behaviours. This newly discovered object was a fertile ground to construct new power relations, expand existing ones and, most importantly, monetise them. Now, noise could be a quantitative *fixed* 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 how it was being measured. Nevertheless, it became a term to distinguish between legitimate social behaviours and their deviant counterparts.

Thus, establishing noise as a measurable, quantitative and *seeable* thing also helped Bell to promote both the decibel as the new measuring unit for loudness and its new Acoustic Consulting Service, which was 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 locations 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 established by Bell, whereby only its **experts** were qualified to provide this. In this way, Bell gave itself the **license** to 'solve' the problem of noise. 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). The **measuring** devices and expertise of Bell engineers meant that they had the only **license** to provide solutions and safety against noise.

During that period, some salesmen had specific territories where they went to 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. This, as Bell emphasised, 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: 53–55).

These maps helped various companies to 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 criterion that mattered for making efficient sales. In this way, Bell wanted to organise itself in relation to already successful constellations to 'ride on their backs' and monetise their success, but also create new spatial and temporal organisations. From the point of view of Bell, department stores were of great interest because these were its main customers for using telephones to purchase products:

> 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: 115–116).

Therefore, Bell's involvement with the NAC fitted another goal they both shared: to get rid of street commerce (push cart and vendors) in favour of retail stores. These stores indirectly helped to advertise the telephone company since they encouraged their customers to call their stores in order to buy something. Therefore, Bell started what it called *co-operative advertising*, which helped both the stores and the telephone company to increase 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 6), not directly saying that people should use their devices and services but subtly hinting at such.

Figure 4: Co-operative advertising (Shaw, 1933: 118).

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 the consumers and the merchants, while giving priority to big retailers and wealthy people. It wanted to train them to adopt new trade practices that would emphasise 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 scientifically 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 6). 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 standardise the telephone and 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 how wealthy consumers were. Therefore, Bell analysed the Census of Distribution, taken in 1930 by the Federal Government, 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).

So, 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 reduce many costs and establish more efficient organisation and distribution. This attempt to promote new services should be read in light of the huge financial crisis after the stock market crash in 1929, 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 it wanted to brand itself as a prestigious service and product through its telephone operators (as will be shown below). Portrayed as objects of desire, they were first marketed to business men, but the crisis meant that Bell needed to expand its marketing to others as well.

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.

Controlling (the other) street rhythm

The education campaign that was initiated was meant for those whose behaviour 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,[41] 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). African-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

[41] 1924 saw the Immigration Act, which limited the numbers of immigrants that could enter America.

> 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).

In addition, she argues that African-American actions were a form of civil disobedience, as the noise they created hurt 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, which was associated with African-Americans, was 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 organisation of NYC's soundscape, African-Americans refused to correct their behaviours to the rational and civilised 'white' body.

This disobedience made its (sonic) mark since 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).

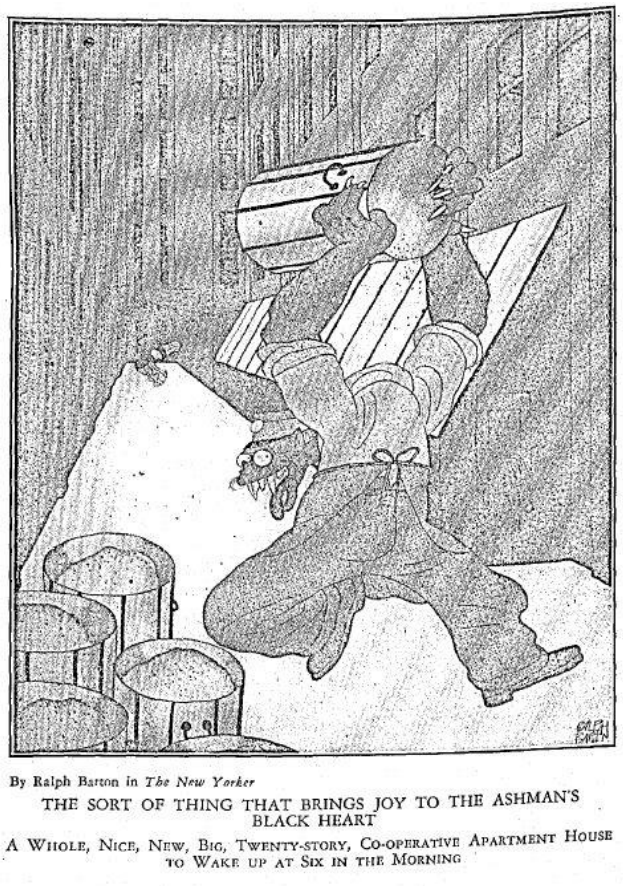


Figure 5: The black ash man (Brown et al., 1930: 85).

The collaboration of the NAC with Bell echoed racial and economic discrimination. In fact, Bell considered blacks and foreigners as noise as well. 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.

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. A way

to enforce this view in a more subtle way was to establish good use of the telephone by the correct pronunciation of English. The right 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 behaviours 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 were not. But, whereas people were more difficult to educate in terms of correct speech, Bell workers, and specifically its switchboard telephone operators, were easier to train. The training programmes that the operators went through in the 1930s and 1940s will be examined below.

Taming noisy women: Bell Telephone's female switchboard operators as a noise source

This section will focus on the women who worked for Bell during the 1930s and 1940s as switchboard telephone operators,[42] and the training programmes the company expected them to undertake to achieve good telephone usage. This section will explore power relations in the case of the telephone and the struggle over its correct use and functioning. Focusing on Bell's operators and the training programmes 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 their 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, 1996: 25, emphasis in original). The main argument here is that the transition to the telephone's dial automation, which delegated operators' work to machines, can be seen as an inspiration for the development of cybernetics.

[42] For convenience, they will be termed 'operators' from now on.

The girls at the left pass numbers to the student operators at the right who are finding the lines on a practice switchboard.

Student operators under instructors at a practice switchboard handle calls made by the girls at the right.

Steps in the Training of Telephone Operators.

Figure 6: Steps in training female telephone operators (LaChance, 1931: 14).

As the abnormal form of information, noise was associated with statistical irregularities or unwanted sounds that must be controlled or eliminated (Shannon and Weaver, 1949). A closer examination shows that Bell attempted to control not only the noise or rhythm of mechanic objects but also that of its female telephone operators' bodies, minds and time. The equation of systemic-mechanic noise with operators' undisciplined bodies expressed a change in the scale and operation of the processed listening deployed by Bell, which expanded its power even further.

Feminising the telephone

In the first decades of the telephone, 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; these boys started to work for Bell at the age of 13, but they were considered to be 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' heads 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 telephone companies, their fine tuning was essential; however, operators received no recognition for their influence on the development of the telephone.

The involvement of women with media technologies is recognised very little in historical accounts. Bernhard Siegert (1998), for example, argues that women have been excluded from media histories. Hiring women for telephone operator positions happened for various reasons; according to Siegert, 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 Siegert (1998), women's voices were a better utility for the position of the telephone operator. However, there were reasons other than the mere technical benefits of the female voice.

For example, Michèle Martin argues 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 behaviour. 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 (1991) emphasises privacy as a factor that could be interrupted by the telephone operators; however, every aspect of their behaviour could potentially become a noise factor, because they were *part of the communication channel*. Their correct behaviour was essential to the smooth and frictionless communication between subscribers, and, 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 companies to sell the telephone service in what she terms a 'labour 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). Women could sell the telephone that they embodied, although they operated manually and thus less efficiently than automatic machines, because their advantage was that they were objects of desire.

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 labour. Women operators were thus objects of desire, but, at the same time, they

were more efficient and desirable economically compared to their male counterparts. Hence, Bell wanted to maximise these objects' usefulness by standardising, moulding, controlling and governing 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 profit. During the 1930s and 1940s, Bell developed training programmes for its operators, which showed an attempt to enact power and control over every aspect of their lives. These training programmes 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 into several spaces and temporalities to reproduce the telephone and the operator.

Designing the perfect (female) model

The training school for operators began in January 1902 and was founded by the management of the Metropolin Telephone and Telegraph Company (later the New York Telephone Company) and managed by one of the first operators, Miss Katherine Schmitt. The realisation that such training needed

to be established came after the increased use of the telephone and, consequently, the need for more skilled women who could handle the high traffic pace with efficiency. In the beginning, it was 'the "survival of the fittest" – the operator with the most lung power got things done' (Barrett, 1935: 116). 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 mediating point between subscribers. Therefore, to ensure an efficient transmission, it had to be clear, concise and embody the 'tone 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 behavioural 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' behavioural research into the organisation along with practical activities. Thus, Bell started to employ experimental psychologists

such as Walter A. Shewhart[43] and John E. Karlin,[44] 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 programmes for better telephone usage. This was mainly because it felt that the technical aspect of the telephone device had reached a stage at which 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).

In the training schools, after a short explanation on the functionality of the switchboard, operators were put to work 'learning by doing', familiarising themselves with the atmosphere of real-time work. Furthermore, 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. Managing and monitoring operators' actions were tasks carried out by not only their supervisors but also by the operators themselves on their own behaviour. 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

[43] Walter A. Shewhart invented control charts, otherwise known as Shewhart charts.

[44] 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.

> supervisor, succinctly remarked, 'the operator must be a paragon of perfection, a kind of human machine' (Lipartito, 1994: 1088).

Inspired by Frederick Taylor's scientific management approach, Bell broke down the operating service into distinct repetitive stages. It aimed to reassemble and standardise the movements to produce the optimised operator, while putting strong emphasis on speed. Here, Bell wanted to turn operators' behaviour into a machine rhythm, to save time and, consequently, money. 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 behavioural 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, 1991: 933). Thus, statistics opened new opportunities to govern and manage operators in the name of efficiency and profit. Bell's earlier **measurements** of operators' motions were designed to construct the most (cost-)efficient norm, but they simultaneously produced what were the irregular, deviant and anomalous behaviours. 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 in which their bodies and performance were listened to and measured statistically. During the second decade of the 20th century, scientific management, Taylorism and Fordism were imported from the US, 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 in order to maximise 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 analysed 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 programmes, or, as he called it, 'Taylorisation of the body', which strengthened operators' bodies and, consequently, optimised them. These physical training programmes, 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 programmes, 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.

Function follows crises

The financial crisis following the 1929 stock market crash, as mentioned above, had huge consequences for Bell. Along with creating new consultancy services, one of the company's responses was to emphasise the service aspect of its business, attempting to make it as pleasing as possible. At the same time, as Green argues, in order 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 increased 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 rationalising 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 organisations, which led US Secretary of Labor W.N. Doak to establish a committee to investigate unemployment caused by technology in August 1931. Since Bell operated as a public utility, it meant that 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, Green argues, 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, whose jobs were mostly kept[45] and management was more willing to hear their union's demands.

Only in the mid-1930s did the situation improve, with increasing subscribers and company revenues. However, then 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.

Bell's belief in telephone operators as a vital element in its telephone system can be understood by its insistence on keeping them despite automatic switching devices (also called 'dial') being invented as far back as 1891, by

[45] Despite dial conversion, men's work was untouched because they could be re-trained. Dial also meant more work for men in terms of manufacturing and maintenance.

Almon Strowger. The invention was quickly adopted by small independent telephone companies, but only slowly adopted by Bell from the 1920s[46] (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 users could be trusted to use the dial telephone correctly:[47] '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 programmes 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.

New services

Another reason for the transition in the approach of Bell from the 1930s to the 1940s came after the company had realised that it needed to increase sales, which consequently led to it investing in the development of more types of service. It 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 fulfil 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

[46] According to Brenda Maddox, Bell started to develop the dial in 1900, and made the first big installation in 1914 in New Jersey. 'Wherever the dial replaced the manual system, the gain in efficiency was about 50 percent per operator' (Maddox, 1977: 272).

[47] 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 the users to operate it (see Green, 1995: 927).

> 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 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, in general, their appearance or marital state should not have mattered at all. However, Bell used the operators' good looks as a promotional tool that would increase the desirability of the telephone, which embodied these women.

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).

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.

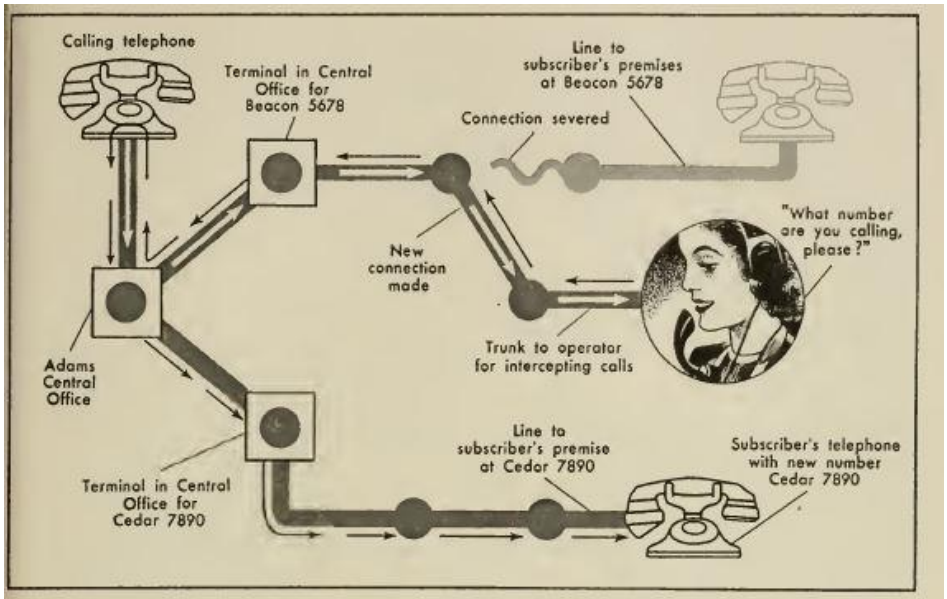


FIG. 2. "THAT NUMBER HAS BEEN CHANGED TO . . ."
In this simplified diagram, Beacon 5678 has been changed to Cedar 7890. A call from a subscriber in the Adams central office to the old number is routed through the Beacon central office (white arrows) to an intercepting operator, who has a record of the change and of the new number—which the subscriber may reach by making another call

Figure 7: The intercepting operator (Bauhan and Goudy 1942: 125).

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 Wiener, feedback is 'the property of being able to adjust future conduct by past performance' (Weiner, 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 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 'memory') and orderings or 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 black-boxed systems, actions such as: 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); reporting and fixing malfunctions of the apparatus; and adjusting performance according to previous situations (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 optimisation of the human nervous system, in the shape of training programmes for operators, then, served as an inspiration for cybernetics. Specifically, it gave inspiration to the process of making media technologies more automated and black-boxed to its users while listening to

their behaviours and producing knowledge that could make the service more efficient and economically successful.

Bringing back the personal

Personalisation 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 personalised care that the operators provided could no longer hold due to the number of people. Nevertheless, it was portrayed as a positive evolution that actually 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 emphasised 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). The 'tone of the voice' became a programme 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). Overly polite speech that was highly emphasised 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, behaviours and voices were under scrutinised control and inspection. They were constantly monitored and observed by their supervisors and peers in order 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 programme 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.

A design for living

WW2 brought various governmental restrictions over telephone usage, interfering with Bell's economical 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 stabilise 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 its 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 the biopower 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.

Due to their stressful work conditions, operators suffered from 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 standardised 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 programme 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: 40–41).

This increased intrusion into operators' ways of living can be seen in one of the flagship training programmes developed by Dr. Theresa Boden, *A Design for Living*. According to Boden, 11,000 women had completed this programme between 1939–1941, 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 programme 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 programme. The programme 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 recognise 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. The programme 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 programme 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 programme 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). 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 and apparatus. The more spaces Bell could listen to, the more it could know them and adjust their behaviours accordingly.

The programme consisted of ten weekly meetings of groups of ten to twelve women, who would sit around a table and talk about their individual potential, while the discussion was led by a group leader. The programme 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). With these topics, 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. This then enabled them to spatially and temporally reorder the rhythms of their lives.

The topic of ‘entertaining’ meant organising social events for soldiers, where the women were the main attraction. Similarly, in the early days of the telephone in Italy, since subscribers would be exposed to the opposite sex ‘female telephone operator became a synonym for “prostitute” and the job considered a dishonourable occupation for a young woman’ (Balbi, 2013: 67). A few decades later, in the US, it seems that these notions were used as a competitive edge, transformed into a strategy to promote Bell. Operators had to function as hostesses and dance partners at parties Bell had sponsored and the women organised. In addition, operators organised 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). However, spirit seemed to have had a wide meaning, which included control over operators’ bodies, minds and time. 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.

Circumventing dissent

These attempts to penetrate into operators’ private lives were a way for Bell to circumvent protest and ‘militancy’ (Green, 1995: 943), which were unwanted forms of behaviour that created disruption to its system, a noise source. Forms of organisation and protest from Bell operators started as early as 1907 in San Francisco, whereas, in 1919, New England Bell operators gathered a big walkout, fighting for wage increases, which signalled to the company that it should address what it 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 organisation among employees and to reorient their thinking along more “constructive” lines’ (Cooper, 1997: 502). Therefore, Bell developed training programmes for its operators as a noise reduction mechanism, a conversion to the correct behaviour.

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 disquiet and channel attitudes towards ‘productive’ directions. These counsellor-operators functioned as feedback loops to stabilise 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 enabled listening

capacities for the operators to empower them to know their peers, and also to train and educate them in cases when they deviated from the right way. Knowledge about the way operators worked and thought 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 organisation and unionisation, leading to the nationwide telephone strike in 1947, led by the National Federation of Telephone Workers (NFTW):

> Women telephone workers and the organisations 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 Awhile,' around-the-clock pickets paraded throughout the South, the Midwest, and in rural towns across America (Cobble, 2005: 21)

According to Dorothy Cobble, twelve thousand women who worked as operators in New Jersey left their positions, against the law, and were jailed and sentenced to high fines as a result. These women demanded equal pay and other rights in the workplace that they had been deprived of during WW2, and they had expected these conditions to improve once the war ended. Cobble states 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 on their leisure time.

Trying to control what Bell women did outside their working hours was a way for the company to prevent any kind of activities or gatherings that involved union organisation 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 – behaviour. 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 recognised 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 stabilisation was interrupted by the operators' constant rebellious actions, Bell realised that their positions should be delegated to machines. Thus, control and power were to be enacted on the population through 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

This chapter looked at the way media practitioners (re)produced people and territories by using sonic epistemological practices in the two decades before the evolution of IT. In the first event, Bell was given a **license** by the NAC to scientifically measure NYC and listen to 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**. One of the devices was the *noise meter*, which was a tool consisting of a sensitive microphone that was aimed towards the city and rendered the sounds into decibels, Bell's new measuring unit. The other device, the *audiometer*, was operated by a Bell engineer, who had one ear covered with a receiver diaphragm that was connected to a phonograph that produced test tones, and the other ear connected to a microphone that listened to the city. Both devices required Bell experts to learn, operate and interpret the sounds they listened to.

As the scientific **measurements** were perceived to be objective, the knowledge Bell produced with its devices and quantitative units could be used for various rhythmedia strategies. This knowledge could be monetised and traded for various other services. Moreover, promoting Bell's involvement with the NAC, the decibel and telephone numbers across multiple media outlets established Bell as the main authority of sound and noise. Bell gained the authority and **license** of the main knowledge producer, and its terminology was credentialised as the 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 quiet and healthy, people needed to **train their bodies** in several ways. First, people were educated on how to describe different behaviours using decibels. This meant that Bell promoted its measuring unit as the standard measure of how behaviours could be categorised, described

and understood. Second, people were trained to behave in ways that would not create noise and consequently burden the city with their unlicensed commerce practices and uncivilised behaviour. Specific groups of people were the target of the NAC and Bell, mainly street pushcart sellers who were usually foreigners from Europe and African-Americans in Harlem. The former group was a target because their advertising practices did not suit the aspiration of the NAC to develop more shopping centres. This group also interfered with Bell's desire to promote its telephone apparatus and service by encouraging people to use retail stores as their main purchasing method. The latter group was trained to be quieter on the streets and to adjust to rational white people's norms of correct behaviour. Third, people would be encouraged to educate their peers into the correct way of behaving. Such biopolitical education was meant for people to police and correct the behaviours of their peers, thus helping the municipality's authorities in changing and monitoring the noisy actions of problematic people.

In this way, the NAC and Bell's knowledge of what a healthy citizen's body should sound like, how it should behave and where, were (re)produced. This was also how they constructed the necessary noise sources and territories such as automobiles, factories and construction sites, as well as what was not necessary, such as irregular rhythmic activities like house parties, street commerce and union demonstrations. In this way, (certain) human rhythms were constructed as unnecessary and noisy while machine rhythm was constructed as necessary. The healthy body was reproduced with Bell's measuring unit, its own language of describing spaces, humans and their relations. Such reproductions and classifications had to fit the NAC and Bell's notions of the efficient rhythm of the city.

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 restructured the way people behaved and also how the city should be reordered towards specific economic endeavours. Any behaviour, 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 categorised as noise. Moreover, they would be **filtered** out of the city by the **training of their bodies**, peer policing and monitoring, and redesigning the architecture of the city in particular ways that produced specific ways of living.

For example, Johns-Manville Corporation, which was an insulation manufacturer, travelled with Bell across the city and helped with the measuring procedures. This was why the services that Bell developed, such as the Acoustic Consulting Service, were complementary to the services that Johns-Manville provided. The report itself provides many recommendations to build better insulation for homes and offices, and it was made possible by the noise map that the NAC created, outlining and credentialising the noisy places.

Other interest groups were real estate companies, and especially big retail stores that the NAC and Bell wanted to promote. Bell could use these shopping centres to promote its telephone service to both marketers and people. The NAC could get rid of foreigners, as well as **de-politicising** union protests and **restructuring the city's territory** for more commercial activities. Thus, such actions were made to accommodate the rhythmedia these interests groups wanted to conduct. But to do this, it was necessary to know people and spaces using scientific 'objective' tools that only Bell's **experts** could operate. In this way, citizen subjects and economic territories could be produced.

In the second event, Bell's operators undertook **training** programmes to optimise their bodies and behaviours and make the telephone service more efficient and economically profitable. The 1929 stock market crash that led to the Depression, along with WW2, led to Bell's realisation that many uncertain conditions that could affect its business. This led to the company adjusting its strategies to exert control and power over the things it owned, such as the telephone and the operators. Since Bell believed its inventions were relatively perfect, it was necessary to reconfigure and manage the service it provided – the behaviour and lives of its female telephone operators. Noise was any unwanted form of behaviour 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 female telephone operators' bodies, minds and leisure time.

The relationship of the operators' position with the concept of noise can be best exemplified by the communication model of the IT of Claude Shannon, from 1948. Women who worked as operators had to manually facilitate the switchboards and, thus, held a crucial position *as part of the communication channel*. Bell felt they should tune their 'bad' behaviour, which embodied noise in its systems. To maintain equilibrium, Bell enmeshed Foucault's disciplinary and biopower forms of governmentality and developed a hybrid form. In this way, Bell's operators became the medium, the message and the **filter**.

As part of their training and strict working conditions, the operators were expected to increase their work rhythm and act like machines – at a fast pace, using repetitive movements, while being efficient and providing effective labour with the 'Voice with the Smile'. Breaking and dividing their work into many elements, which was inspired by Taylorism, facilitated rhythmedia in a reorganisation of the ways they talked and operated the apparatus. In this way, operators were produced just like Bell's telephone devices. Moreover, operators were expected to **filter** noise made by the telephone or subscribers because they knew (by using their memories) how the apparatus and infrastructure worked and could fix any issues themselves to reach equilibrium. When it came to the subscribers, they would sooth any anger about problems with the system using their effective, friendly tone, sounding eager to serve the subscribers' every desire. They would also be able to translate between subscribers and the machines because they were part of the apparatus.

In the *Design for Living* programme, operators were trained to exercise, take care of their body hygiene, eat specific foods 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

establish the optimised ways of living that should be ordered for them. However, Bell also gave the operators controlled and limited listening capacities to **de-politicise** their actions. First, it 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* programme 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 programmes were conducted after working hours, this was also a way to monitor what they did outside work. Third, Bell delegated some listening capacities to selected 'likable' operators who functioned as counsellors to their peers in order to know and 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 tried to ensure the operators uncrowded their actions both inside and outside work. Rhythmedia was conducted to restructure and order their bodies and behaviour, inside and outside the workplace.

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

Both the conceptualisation of 'bad' human behaviour as noise, and the recognition of humans and machines as equal 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, it could swap them with automatic machines that could achieve equilibrium through self-governing feedback loops. Thus, Bell enacted its power through an in-built, black-boxed,

controlled design, and by doing so decreased both users' ability to disrupt its inventions and the uncertainty of its systems.

This also sets the foundation for Shannon and Weaver's conceptualisation of noise, which they developed at Bell Labs in the late 1940s. In IT, they established and legitimised which forms of information should be categorised 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 machines operating in a feedback loop. These technologies were designed in a specific way to efficiently govern through statistical measures that constructed the right behaviour of information and, consequently, the users. This introduced the next phase in the evolution of biopolitics as a new form of governance, while integrating it into previous disciplinary techniques. Therefore, this fusion of governmentality could also be seen as the 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, black-boxed media technologies.

Chapter 5 – Weaving people and architecture into the European Union World Wide Web

Introduction

This chapter jumps several decades from the previous one, and looks at digital communications, specifically in the European Union (EU) internet. The chapter continues the same project of looking at how media practitioners deployed the seven sonic epistemological strategies to (re)produce territories and data subjects in the EU internet. Whereas the previous chapter examined the reconstruction of NYC, the first section of this chapter focuses on a different territory – the internet in the EU. 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 noise. Thus, this chapter shows how media practitioners deploy similar strategies in territories and on people by using a different media category to produce deviancy, now called spam.

The first section of this chapter looks at how power relations are created through media that structure and reproduce new ways of knowing people and objects through *processed listening*. This is enabled by the European Commission's soft law approach, which promotes industries' self-regulation that enables the advertising and technology industries to **reconstruct territories** and people in a particular *rhythmedia.* Such practices that produce subjects and objects (including behaviours and the architecture they operate in) as possible forms of becoming on the internet are at the heart of this chapter.

In the previous chapter, sonic epistemological practices were used through Bell's apparatus and measuring units to reconstruct NYC and the behaviours of the people who lived in it. In this chapter, there is a development from material and embodied epistemological tools of sound, noise, listening and

rhythm to more immaterial and conceptual tools on the internet. However, as Lakoff and Johnson observe, 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, 2003: 4). In other words, concepts and metaphors *do* things.[48]

As part of **restructuring territories**, this chapter introduces another technological-spatial layer that constructs power relations relying on further black-boxing and automation of people and communication for economic endeavours. This reorganisation introduces new communication channels, which enable people's behaviour on the internet to be listened to. Such channels are facilitated by cookies and web bugs, and are governed by publishers (first-party cookies), and advertising and exchange networks (third-party cookies). These channels communicate users' behaviours which become the message (turning into 'data'), and are listened to through cookies allowing for further ways of knowing people through **measurement**. The power is enacted here in two main ways: first, knowledge 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.

These channels are operating on an accelerated rhythm because they facilitate communication between non-human actors. These channels were made possible by **new experts**, such as the Interactive Advertising Bureau (IAB), the European Federation of Direct and Interactive Marketing (FEDMA), web browsers, and publishers who have different interests in producing a new economic trade territory to save the internet after its near demise after the dot-com bubble crash. Other media practitioners, specifically trade associations such as the IAB and the European Advertising Standards

[48] Such metaphors are powerful in their ability to do things, as can be seen with the now commonly used metaphor in technology – 'the cloud'. 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.

Alliance (EASA), provide **licenses** for companies that want to participate in this e-commerce. Importantly, these practitioners provide **licenses** to *themselves* in the shape of self-regulation standards that are supported by states and are supposed to uphold codes of conduct that they draft, police and sanction.

Such **licensing** credentialises and institutionalises their profession and position in the online market. By doing so, they enact new power relations that authorise them to deploy specific sonic epistemological strategies that produce subjects and territories. These subjects are mostly unaware of the existence of these **experts**, that their behaviour is being listened to, **measured** and recorded, or for what purposes. These new communication channels create an accelerated recursive feedback loop, and such rhythmedia reorders human and non-human subjects who are (re)produced according to inputs given mainly by the advertising and technology industries.

With the soft law approach, the EC delegates the authority to commercial actors to insert their own definitions of deviant behaviours according to their needs. At the same time, the EC authorises actors (mainly advertising companies and associations) to produce legitimate behaviours. This biopolitical strategy of fluid categories is more powerful because it means that spam can be anything that a specific media organisation does not see as fitting in with its agenda. The elusiveness of spam in EU legislation shows how power relations are constructed by *not* defining it as a distinct category.

In this sense, the advertising industry and technology companies discussed in this chapter conduct two strategies: they standardise their behaviours of sending cookies as a legitimate form of communication by presenting such practices as conducted in a public space and for legitimate purposes. At the same time, these experts illegitimise non-institutional advertising companies and users by framing their behaviours as ‘spammy’ and conducted in a private space. Therefore, as they argue, such behaviours are intrusive and illegitimate. In this way, it has been possible to make a distinction between similar behaviours by institutionalising cookies and illegalising spam. Thus, such soft law processes of privatisation and de-regulation show the power of

tech and advertising companies in controlling and managing the way behaviours of different entities on the internet are operated and understood.

The second part of this chapter focuses on the way new data subjects[49] are (re)produced on the EU internet in three ways. First, the **new experts** have been involved, in different capacities, in developing new *processed listening* capacities using standardising units to **measure** people's behaviour on the internet, mostly through browsers. Such *processed listening* turns people's behaviours into objects – data – which can be quantified, compared, transferred and monetised in the accelerated rhythm channels. To have more accurate measures of behaviours on the internet, the advertising industry has developed filtration mechanisms. They **filter** non-human traffic that can jeopardise the consistent and accurate listening procedure. Filtration consists of three main methods: 'basic' techniques, identifying specific suspicious non-human activity according to IAB's Robot List, and pattern analysis of users' activity, which analyses the rhythm of people's behaviour online to detect abnormalities. **Measuring** in a standardised manner and turning the internet into a monetisable 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.

Part of the standardisation process was imposing limitations on excessive online behaviour, which helped **de-politicise** activities that created a burden on the infrastructure. This was a way to control and manage rhythms that have political potential, such as Distributed Denial of Servie (DDoS), while legitimising other similar rhythms that were meant for purposes of economic benefit for the actors that fund the internet. Hence, while the fast-rhythm communication channels were legitimised as sound, other high-tempo communications were criminalised as noise. Finally, the procedure to create

[49] 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. Subjectification and enactment must be understood in relation to the configurations and arrangements through which people engage in creating "themselves as 'legible' subjects"' (2011: 255). In this dissertation, such data subjects are always in the process of becoming.

specific data subjects was **training of the digital bodies** of EU citizens through the Safer Internet Programmes that spanned from 1999 to today. This biopolitical training programme educated users in reporting and stabilising the EU online market by encouraging citizens to report illegal content and navigate between pre-decided **filtering** mechanisms that were provided to parents.

Paving the cookie highway with soft law

One of the first procedures to produce the European online territory can be traced to 1987, when the EC introduced the *Green Paper on the Development of the Common Market for Telecommunications Services and Equipment*. The Green Paper[50] emphasised 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 meant the commodification and trade of EU citizens' behaviours. The EC 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).

[50] 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).

Such free movement of data within the EU helped to establish new communication channels that relied on such data and created a new online market where people's behaviour 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). This online market, it insisted, 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.

The 1987 Green Paper was part of a larger European-wide governance transition to 'soft law'.[51] According to Linda Senden, from the mid 1980s, the European Community started to change its approach to legislation towards co-regulation, soft law and self-regulation as the main instruments of governance. Senden outlines two complementary pillars that represent this European legislation policy; first, 'do less [regulation] in order to be better', and the second, use more governance mechanisms, such as non-binding recommendations, best practice, guidelines and communications. Another feature Senden emphasises is flexibility, meaning there is no need for the agreement of all member states on issues.

An important document laying the ground 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 steps in the soft law approach, which flags the importance of integrating commercial actors to

[51] 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).

regulate illegal and harmful behaviours 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.

This marks one of the first steps in legitimisation for commercial organisations to have the power to produce the online EU market. 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 institutionalising the position of commercial actors by granting them a **license** to be the new regulators of the internet through 'voluntary', self-regulation mechanisms. This **license** enabled them to conduct processed listening and produce data subjects. Heralding the notion of 'safety', these instruments introduced unaccountable procedures of monitoring and **measuring** citizens' movements online, while commodifying and trading them. Thus, citizens' behaviours were not only conceived as consumption, but 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 at this time is a discourse that normalises commercial actors' participation in policy making and enforcement. As Katharine Sarikakis argues with regard to the naturalisation of privatisation in internet governance: '[t]he ideological and normative constructions of policy-making for the Internet express a form of *neo-liberalist determinism* that can be categorised 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 behaviours and not the economy, as they argue.

This new online market produces bodies that can be listened to, **measured** and traded. This is done by rendering their behaviour into data that is then traded in an accelerated rhythm through multiple communication channels. This approach will be shown below in the case of distinguishing between spam and cookies through non-legislative agreements and documents produced by the IAB[52] using its standards and measuring metrics.

To provide **licenses** to themselves, advertising associations drafted various self-regulation standards, 'best practice', charters and models that authorised their positions as main players in the EU online market. In June 2004, the European Advertising Standards Alliance (EASA[53]) organised a self-regulation summit with over 130 participants from the advertising industry, including the EC, 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, 2004: 1, emphasis in original). But this, 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 advertising industry's 'self-regulation', then, is funded by the industry, adjudicated by the industry, to guidelines established

[52] 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).

[53] The EASA was founded in 1992 to support and promote the European advertising industry's self-regulation.

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 the state.

The self-regulation sanctions in the digital advertising documents 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 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 firms that trade and exchange data on the silent communication channels, specifically Demand Side Platform (DSP) and Supply Side Platform (SSP) (which will be discussed below).

Moreover, in all three documents, when it comes to 'consumer awareness', the EASA discusses awareness of complaining about the industry's misconduct and not about the existence of the multiple actors involved in the accelerated rhythm and automated online market. When the EU did decide that users 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 work, but rather the illegal and harmful behaviours they should avoid and report (more on EU user education in the last section).

Therefore, 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 Behavioural Advertising (2011), the EASA Best Practice Recommendation on Online Behavioural Advertising (2011), are operating as **licenses** that are provided by these organisations *to themselves* to legitimise their practices. Importantly, these **licenses** provide the authority and legitimacy to create new power relations constructed by the new online market. This soft-law approach shows how *not* being categorised is more powerful in (EU) internet governance.

Introducing new multi-layered communication channels in the European Union

The topic of internet governance and specifically the multiple actors involved in EU internet governance is complex. It comprises international bodies, governments, private companies and NGOs that coordinate in a way that produces the operation of the internet (its structure as well as 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. In this context, it was more convenient and desired by many western states to promote the soft law approach rather than specific laws. The self-regulation codes of conduct of advertising associations and contracts with commercial companies such as ISPs, software and protocol patent holders has 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 (ITU),[54] the Internet Society (ISoc),[55] the Internet Corporation for Assigned Names and Numbers (ICANN),[56] the Word Wide Web Consortium

[54] 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.

[55] The Internet Society (ISoc) is an international non-profit organisation, founded in 1992 by Vint Cerf and Bob Kahn.

[56] The Internet Corporation for Assigned Names and Numbers (ICANN) was founded in 1998 by Jon Postel and is a non-for-profit organisation responsible for coordinating the Internet Assigned Numbers Authority (IANA) functions.

(W3C),[57] the Internet Engineering Task Force (IETF)[58] and the Electronic Foundation Frontier (EFF).[59] Most of these organisations were founded and are based in the US and receive criticism on the centrality of their values, language and standards that is influencing global internet governance (Carr, 2015).

Self-regulation of advertising associations and contracts with commercial companies such as ISPs, platforms and applications has become the new governing standard on the EU internet.[60] Such interest groups 'have adapted to the multi-layer character of the European system by establishing organisations 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 and managing their behaviours. In particular, these groups aimed to establish the legitimate and illegitimate behaviours according to their business models. This is illustrated in their strategies to distinguish between spam and cookies and restructuring the spaces where these can be performed.

While spam's exact definition cannot be found in EU law, non-governmental organisations such as the IETF have described it as 'mass unsolicited electronic mail' (Lindberg, 1999), or, similarly, as the anti-spam organisation Spamhaus delineates, 'Unsolicited Bulk E-mail … Spam is an issue about consent, not content' (Spamhaus, n.d.). Emphasising these characteristics shows two important aspects when classifying forms of behaviour on the

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[57] The World Wide Web Consortium (W3C) is an international organisation, founded in October 1994 by Tim Berners-Lee. Its mission is to develop standards for the web with different stakeholders.

[58] 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.

[59] 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).

[60] 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.

internet: whether this behaviour creates a burden on the system's infrastructure (bandwidth), and whether this behaviour was conducted without being requested. These two topics have different interpretations and meanings for different actors at different times.

'Consent' (more on the politics behind consent in the sections below) provides insight into the politics of categorising spam, because a division has been created between spaces where users have the right to reject communication, and spaces where they do not.[61] 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 on the streets or watch cinema – because these are transmitted in public spaces – they also do not have a right to refuse advertisements in spaces on the internet that were conceived as public.

The designing of an architecture that re-draws the boundaries between private and public and introduces ways of regulating behaviours on the internet began with cookies. 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. In the original HTTP protocol (Berners-Lee, Fielding, and Frystyk, 1996),[62] 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 server. Cookies were meant to change this by creating what computer scientists call a

[61] 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.

[62] 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.

‘stateful’ session. ‘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). The web started to remember. Two other important things happened to the web with the introduction of cookies – they penetrated people’s digital bodies, enabling access to their computers, and they introduced additional layers of channels to users’ internet communication that were hidden, automated and accelarated.

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 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, ‘Value’, which is a unique ID number,[63] and ‘Path’, which means a URL in a domain that it is valid.

Importantly, Montulli and Kristol outline the minimum design requirements that browsers must apply in order 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 authorised by design. This standard enabled hundreds of cookies to communicate through people’s

[63] This number, assigned to people’s individual computers as an identification marker, is one of the main arguments that advertising companies use as it is creating the notion that the communication is anonymous.

browsers to various media practitioners on the internet on their behaviour within multiple websites.

So, on the one hand, people's experience on the web was conducted in a specific space 'front end', while the advertising industry's activities were conducted in the 'back end'. This created a boundary of knowledge between the 'average' users and the accelerated rhythm online market that was at the back and conducted by non-humans. So, although cookies rely on users' browsing behaviour, they are not signalled through visual or audio queues regarding this activity. But instead of automatically adopting computer scientists' definition of cookies as a form of memory ('state'), cookies can be described as a form of communication. Montulli demonstrates this 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 listen to people's behaviours across the web. This new form of communication has turned people's behaviour into data – the message – that is communicated between non-human actors operated by multiple actors.

While first-party cookies are sent and operated by the publishers/websites that people request (as defined by the URL displayed on the browser's address bar) and communicate with their browsers without their knowledge, third-party cookies are sent by other companies. Such cookies were developed immediately after first-party cookies and are usually operated by internet advertising networks such as DoubleClick. They have become the main technology used as part of behavioural advertising, which is an:

> [A]dvertising that is based on the observation of the behaviour of individuals over time. Behavioural advertising seeks to study the characteristics of this behaviour 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).

Cookies, then, are (bulk) communications conducted by non-human actors (users' browsers and publishers or advertising networks) who 'talk' with each other about pre-defined 'topics' (specific behaviour 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 US, computers can also be considered as users and therefore cookies can be defined as electronic communication (Goldberg, 2005: 262). Such non-human actors, then, listen to people's behaviour in different places and turn this knowledge into data that becomes the message of that communication channel.

Third-party cookies, and the data (people's behaviour) 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 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). Behavioural advertising facilitated by third-party cookies, then, 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.[64] This new way of listening to people and producing knowledge not only helped to stabilise the advertising industry

[64] As Omer Tene and Jules Polonetsky argue, '[a]n 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).

practice but also, importantly, offered an efficient and successful way to fund the internet.

Furthermore, cookies requests through the HTTP protocol are performed automatically by people's browsers, not according to their requests. The 'topics' (pre-defined behaviours of people on websites) communicated by cookies are unknown and opaque to the user. 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 unsolicited bulk communication without a human interface (because they are conducted by non-human actors), meant for direct marketing (personalised ads).

Moreover, cookies have not only introduced a new form of communication that produces people's behaviours on the web into 'the message', they have also managed to bypass the problem of burdening bandwidth. Cookies have avoided being 'bulk' thanks to the browser being designed in a way that automatically discards cookies 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 '[b]ecause 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.

Privacy-concerned people classify this unsolicited communication designed to track users' online behaviour as spyware. As Danny Meadows-Klue, chairman of the IAB United Kingdom, said in 2001, following the drafts of the e-Privacy Directive, 'Cookies have been branded as spyware tools, or some kind of subversive software… But it's what we use everyday' (Reuters, 2001).

This can be seen in the accompanying technology to cookies called web-bug/beacon/pixel tag[65] – which was developed at the end of the 1990s. A web-bug is an invisible graphic that is automatically downloaded without the user's knowledge, and enables an advertising company to produce user profiles. The process starts by sending the cookie and then the web-bug provides more accurate information on the kind of behaviour the user performs on the pages they visit. According to Richard Smith from the EFF, the reason web bugs are invisible is '[t]o hide the fact that monitoring is taking place' and that '[t]he Internet advertising community prefers the more sanitised term "clear GIF"' (1999). The A29WP expressed its concerns with this kind of invisible and automatic processing of personal data. As it argues, '[b]rowsers often send more information to the Web server than strictly necessary for establishing the communication' (1999: 4). The production of data subjects is conducted in a rhythmedia that is silenced for the people.

But, although such mechanisms are spying on users by listening, recording, archiving and monetising their behaviour for various purposes without their knowledge, the companies that operate such silent communication channels do not consider them to be spyware. Laura DeNardis (2007) argues that the definition of spyware is disputed among software developers and marketing companies who do not think their technologies should be categorised as such. So, although cookies and their accompanying technology web-bugs can be considered to be spyware, malware and spam, they are not categorised as such because their utility is perceived as legitimate and vital for the web's business model. This legitimisation 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

[65] 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).

> commissions when consumers viewed advertisements or for transactions resulting from advertisements (DeNardis, 2007: 700).

This revenue model meant that the advertising industry had more power in shaping how online communication would be defined, performed and managed. Such power can be seen in the industry's ability to influence the IETF cookie standard. According to Schwartz (2001), in 1997, the IETF working group recommended that users should have control and decide for themselves the kind of communication that is made on their behalf. 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 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). For these suggestions, the organisation 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 crystallised 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).

While Montulli said the new Navigator 4.0 browser would enable users to reject third-party cookies, he also reassured the online 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, '[i]f 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). What is clear from Montulli's remarks is his naturalisation of this kind of business model – that people's behaviour should be traded if they want to 'go to these sites'. Eventually, Montulli left the working group, claiming that the suggestion about rejecting third-party cookies as a default setting was added to the IETF proposal against his wishes.

As Elijahu Sparrow argues, 'after a back-door lobbying campaign from the advertising industry, both Microsoft and Netscape chose not to follow the IETF cookie standard and allowed third-party cookies by default' (2011: 9). As he observes, Netscape and Microsoft's dominant position in the web browser market, along with the fact that few people change default settings, has allowed advertisers to continue using third-party cookies. People's online behaviour is governed in a biopolitical way, by shaping the options of living in a particular rhythmedia through browsers where they can 'freely' act according to advertisers' rationales.

Similar to Bell, here, too, commercial companies are creating the standards of forms of communications, whereby the 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 firms to develop, define and enforce their own standards, under the **license** of self-regulation. It enabled a translation of EU laws according to commercial actors' rationales. Wendy Brown, who develops Foucault's notion of biopolitics, points to the economisation and tacticalisation of law, and specifically the way that economic metrics shape the way the state and its institutions operate. She observes that, '[g]overning *for* the market means that sovereignty and law become supports for competition, rather than rights' (Brown, 2015: 66). As mentioned above, states operate as regulators of rogue advertisers rather than the advertising industry as a whole.

The delegation of regulation to commercial actors enables them to deploy sonic epistemological practices that order the options of living to produce data subjects through media and the architecture in which they operate. This

rhythmedia was made legally possible due to the artificial boundary between private and public spaces on the web. The distinction was made according to the categorisation of identified personal data (such as email) as a private space, and anonymous browsing (across the web) as a public space. The ordering of this unique online territory will now be illustrated.

Making public and private spaces in the EU internet territory

Because private or public spaces on the internet have not been clearly defined in EU legislation, law makers and the private sector wanted to produce them while relying on characteristics of previous media technologies that people already know, such as snail-mail and 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 behaviours to the online territory. Both Article 13, which is about spam, and Article 5, which is about cookies, appear on the Electronic Privacy (e-Privacy) Directive because they deal mainly with the privacy of specific spaces on the internet. However, 'there is no simple way to *zone* cyberspace', as Lessig observes (1999: 28, emphasis in original). Just as it was essential in the early 20th century 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 internet 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 internet territory was conducted by regulating illegitimate rhythms, such as spam, and legitimate others, such as cookies.

Such ordering notions can be seen in the A29WP's opinion on anonymity on the internet, whereby it compares browsing the web to 'browsing in a public

library or a bookshop, or wandering through the high street window-shopping' (1997: 9).[66] This was portrayed in contrast to email, which was constructed as a private space. For example, the OECD's document on anti-spam regulation suggests that, '[t]o the extent that e-mail addresses are personal data, then use, exchange or selling of these may be seen as illegitimate invasions of the privacy of the addressee' (2005: 20).

Constructing email as a private medium 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 that provides that space), hold this key and can access and use this place.

In this way, email was conceived as analogous to understandings of a physical home that provides privacy in people's lives and the communication that connects them from that place. As the A29WP argue in relation to privacy of email screening 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 internet.

But the A29WP also acknowledge that browsing on the web, which is conducted in a 'public' space, should be treated as a private activity. They

[66] The A29WP even added that, '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).

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, 2000a: 50).

However, this opinion and others about the need for confidentiality when browsing were not implemented because of the new revenue model for the web (free access to content and services). This means that specific spaces and activities that can be used for direct financial transactions will be private (such as email and online shopping), while 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 the confidence of EU internet users in this technology, and online commerce more broadly.

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 internet altogether. Thus, creating a distinction between private (email) and public (web) spaces on the internet was essential for the EU e-commerce. Email serves as 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. As the A29WP argues in the proposal for the ePrivacy Directive, 'Nuisance caused by junk e-mailers undermines customer's confidence in e-commerce' (2000b: 9). Reviving e-commerce was a joint interest of the EC and commercial actors such as browser companies,[67] 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. 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 internet as a medium where they could buy things, a new consumer territory. Therefore, they made architecture designs through the default settings of browsers to ensure that when users wanted to purchase things, then their behaviour 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 credentialised by a technology that Netscape developed for its web browser, Navigator, called the Secure Sockets Layer (SSL).[68] As Thomas Haigh observes, 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

[67] 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).

[68] This protocol evolved into Transport Layer Security (TLS) during 1999 when the IETF published the first TLS standard (Dierks and Allen, 1999).

> (SSL),[69] made the Web a practical platform for financial transactions and other sensitive data (Haigh, 2008: 132).

In this way, specific behaviours on the web, mainly those meant for direct financial purposes, were signalled to people as important since they would be standardised as a default private mode. Such a mechanism was introduced in order to reassure users that buying products online would be kept private. By developing these two technologies in the 1990s, Netscape created a distinction between spaces where people buy online, which is private, and spaces where people live online, which is conducted in the public space. Through such territory design, people were biopolitically **training their bodies** to understand their options of living online. Behaviours that were performed in public space would be able to yield profit by other means – by listening to people's behaviour, measuring it and turning it to data that could then be monetised, traded and exchanged. The types of information that could be inferred from people's browsing habits were: age, location, sexual preferences, health condition, education, political views, content preferences and more.

Advertising and tech companies developed guidelines and technical features, which were more flexible, faster and easier to enforce (by them). Therefore, keeping spam as a flexible category is important in order to tackle current and new emerging threats in the dynamically evolving EU internet territory, while catering for online advertising, media and publishing needs. This flexibility can be seen 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:

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[69] According to Lessig, there was another similar protocol called the secure electronic transaction (SET), which is 'a standard adopted by a consortium of credit card companies for exchanging credit cards data to facilitate greater security … [D]eveloped by committee, it is a standard that has proven too complicated to implement effectively' (1999: 40).

online gambling services, misleading and deceptive business practices, pyramid selling, and unlawful trade practices (OECD, 2005).

What this classification of different types of spam shows is all the products and practices that might be a threat to legitimate companies. Thus, such classification has institutionalised and legitimised organisations that are authorised to define, enforce and manage the online market. 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 authorising 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 categorised as illegitimate made spam seem wholly evil, while cookies, by contrast, are a form of communication necessary for the value-added experience of the online internet territory.

These measures were not implemented by governments, but rather by commercial companies under the EC's soft law approach. This was carried out by authorising specific companies/websites, classifying appropriate characteristics of the products and the way to circulate them (bulk), and the way to advertise them as illegitimate and, consequently, illegal. This helps to legitimise and institutionalise the online territory but also to **train the bodies** of the users in the kinds of product with which they are allowed to engage. Importantly, it **trains users' bodies** in what types of behaviour are illegitimate and illegal.

Word games lobbying: legitimising EU (un)solicited communication

As a global medium, and a new market, states, and especially the private sector, wanted the internet 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 behaviour on the Net more regulable' (1999: 43–44). Since the government cannot govern people's online behaviour in disciplinary modes, it does so by delegating the regulation of online territories to commercial actors that can then influence, modify and manage people's behaviours in a biopolitical way, ordering options of living whereby they can 'freely choose' within these routes. 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 organisations such as the IETF (as shown above), it also targeted regulators that decided on the way the internet functions. 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 finalised. She argues that, initially, EU legislators proposed the opt-in mechanism, which made the digital advertising industry push for the opt-out mechanism, while arguing that this 'is 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 emphasised 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.

According to Kierkegaard, in 1999, the European Commission issued a Communications Review to amend the previous privacy regulations from 1997, and, in 25 August 2000, published the first proposal. On 13 July 2001, the European Parliament's first amendments to the e-Privacy Directive

proposal were to prohibit cookies altogether,[70] which was also the A29WP's suggestion in 1999.[71] As Kierkgaard observes, '[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 whole online industry. The strategy was mainly targeted towards MEPs, showing them that, if website owners and publishers had to ask for users' consent 'in advance' of sending cookies, as the Council's amendment from 2002 stated, then they would lose millions of euros. This would be because they would have to re-design their web pages to comply with this requirement, which would also harm their competiveness compared to their non-EU counterparts. This approach, as they argued, would be harmful to 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 reached by banning spam in exchange for removing the wording 'in advance' in the cookie Article and Recitals. Importantly, this campaign was successful, Kierkgaard argues, also 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

[70] 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).

[71] According to the A29WP, '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).

send viruses, while cookies can be deleted by browser preferences. The lobbying on the perception of how people understand the internet worked.

The lobbying effects can be seen 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 *after* they have been conducted, 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 users need to get information about the purpose of cookies. This is precisely where EU legislation draws the line under the legitimate forms of communication, where it legalises cookies as a legitimate purpose because they are 'useful tools' for web design and advertising. It is also where the EU acknowledges that access to websites' content can be conditional on accepting cookies. Additional lobbying effects can be seen in the legitimisation 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).

Although the Recital admits that users' terminal equipment, i.e. users' hard drives where web-bugs and cookies are installed, 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. All this means that the EU institutionalises e-commerce, whereby the advertising industry finances users' free access to content with advertisements. This is the solution that was promoted after the dot-com crash as the new online market. However, this business model, and specifically the price that users have to pay, was not made clear, visible or even known to them.

Furthermore, publishers usually circumvent their obligation to provide the purposes of processing users' personal data, which are mentioned in the Data Protection Directive and Article 5(3), by stating some of the purposes behind processing in the contract section. This section, which receives different names such as 'terms of use' or 'terms and conditions', relies on the fact that most users do not read these long, laborious and jargon-laden documents. Importantly, what is not written in these contracts are all the other actors involved in the automated market that third-party cookies facilitate. 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, in which people have exercised their autonomy and removed cookies, their access to the publishers' content is blocked.

Other lobbying effects can be seen in deleting this segment that appeared in the draft of the 'spam Article', Article 13(1), which was not included in the final version: 'and other personally addressed electronic communication' (Asscher and Hoogcarspel, 2006: 36). This line implies that direct marketing in forms of electronic communication other than fax, telephone and email could be considered as unsolicited communication. In other words, cookies will also be considered as spam, because they are the same form of communication.

Importantly, up until the 2000s, big companies' communications were classified as spam by EU users. 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 users perceive and define as spam, the second paragraph of Article 13 legitimises and prioritises big companies, and their marketing practices. Article 13(2) states that, if a user has bought something from a company on the internet, the company can send the user advertisements regarding the same kind of product or service, and it will not be categorised 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 successfully 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 can also track users and invade their private space while exploiting their personal data. But the exact same definition can also be applied to cookies. It is just a matter of which economic purpose is conceived to be the appropriate one. In other words, spam and cookies are the same communication practice; but, whereas spam is categorised by commercial companies (anti-spam organisations, advertising and media industries, ISPs and publishers) as an unwanted form of communication and, consequently, automatically diverted through email

services design into a folder called ‘junk’ or ‘spam’, or outside of users’ online experience altogether, cookies are usually categorised as wanted forms of communication (by online publishers, website owners and the advertising industry) and sent into users’ 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 so effective. As Mayer and Mitchell observe: ‘The 2002 ePrivacy Directive, 2002/58/EC, mandated that websites enable users to opt out of having information stored in their browser, except as “strictly necessary” to provide service “explicitly requested” by the user. 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, what these legislations do is create a discourse that naturalises and institutionalises the roles of each participant in the online automated market, and, in particular, the central role of commercial actors in creating, defining, managing and enforcing the online market. However, 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.

Creating the data subject

Several procedures were made to (re)produce EU users into data subjects, objects (their behaviours), communication channels and **filters**. These procedures were mainly conducted by the advertising and tech industries and the European Commission in order to **train the bodies** of people in using and understanding the internet in a particular way – to shape them according to their data subjects role(s). This was done in three main ways: one, standardising web metrics; two, providing ‘control’ mechanisms to users; and three, educating for safety.

During the production of the EU online territory, the advertising and tech industries wanted to produce people as data subjects that navigate within controlled architectures that structure their possible ways of living. They also wanted to be able to listen to their behaviours across the web, while **measuring** them using standardised tools and units. This enabled these media practitioners to train and institutionalise *themselves* to commodify people and their behaviour. It also enabled them to statistically map human behaviour online and establish what counts as deviant and non-human behaviours. In addition, people were given 'control' mechanisms when they used the internet, but, here, control was enacted *on* people rather than *by* people.

The concept of control was used against people as these options were pre-decided, limited and designed in a way that narrowed and managed the way they could use and, ultimately, understand the internet. Control also meant that, once people 'consented' to cookies or expressed consent by using default settings, they were also made responsible for their actions, even if they did not know the meanings or repercussions of such 'actions'. Finally, people went through an educational programme 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 behaviours that could jeopardise the safety of the EU online territory. These three procedures will be examined in the following pages.

Standardising web metrics

In the late 1990s and early 2000s, the need to fund the internet 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 quantify and record their behaviours and, importantly, trade them. They wanted to be able

to develop and standardise listening capacities and these were already achieved on another front, which was the production and **restructuring of the EU online territory**, as discussed above. The training of advertisers was necessary to institutionalise their profession on the internet, and to create standards for the production of data subjects. Standardised metrics and measuring practices also helped in persuading brands to spend money on digital advertising by showing the web as a profitable business that has wider and deeper listening capacities.

The advertising industry has been interested in people's behaviours 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 at the 19th century, they needed more information about their audiences to sell them back to advertisers. Almost a hundred years later, publishers relied more than ever on advertisers as they turned to a business model of free content rather than subscription.[72]

As Hoffman and Novak argue, at that time, the advertising industry's revenue model for the internet was still unclear and it was not certain that companies would be able to generate money from advertising on the internet. 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*' (Hoffman and Novak, 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 digital advertising practitioner.

[72] 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' (2011: 41).

To establish consistent, comparable and accurate measuring methods and tools, and provide definitions for advertising practitioners, 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 (PwC)[73] to examine several companies and identify the common audience and advertising delivery **measurement** metrics, definitions and reporting. The companies that participated in this phase consisted of 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 15 January 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 full list of participants can be seen in the image below.

[73] PwC was given the name of the IAB's 'Measurement Task Force'.

Project Participants

International Ad Servers

AdTech (Germany)
ALLYES (China)
Aufeminin (France)
CheckM8 (US/UK/Israel)
Cossette/Fjord Interactive (Canada)
Falk AG (Germany)
JNJ Interactive (Korea)
Iprom (Slovenia)
Predicta (Brazil)

Other Participants

ABCE/IFABC (Europe)
Advertising Research Foundation (U.S.)
Amer. Assoc. of Ad Agencies (U.S.)
Association of National Advertisers (U.S.)
EACA (Europe)
EIAA (Europe)
ESOMAR (Europe)
IAB Argentina
IAB Europe
IM Services (U.S.)
Interactive Media Association (Brazil)
Media Rating Council (U.S.)
PricewaterhouseCoopers LLP
JIAA (Japan)

U.S. (* = non-publisher)

24/7 Real Media
About.com
Accipiter*
Advertising.com
AOL
Atlas DMT*
BlueStreak *
CentrPort*
CheckM8*
CNET Networks
Disney Internet Group
DoubleClick*
Fastclick
Falk North America*
Focus Interactive/Excite Network
Forbes.com
Google
I/PRO*
Klipmart*
MSN
NY Times Digital
Overture
Poindexter Systems*
Red Sheriff*/Nielsen NetRatings
Value Click
Weather Channel Interactive
Yahoo!
Zedo.com*

Figure 8: The advertising industry's standardising project participants (IAB, 2004: 4).

All the companies PwC studied used the same five metrics to measure users' behaviour: 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 behaviours across the web.

Unique visits are measured by cookies (divided by new or repeated visits) or IP addresses. 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 behaviour (PwC, 2001: 24). In this way, people's behaviour is collected, categorised, and recorded in different temporalities, according to different **measuring** practices. Ad and page impressions are measurements of users' viewing of an advertisement or a web page, respectively, which are tracked by two methods: web server logs or web-bugs. Using this measuring technique, digital advertisers decide which amount of time can be considered as an impression.

Bodies that count

In this context, browsers hold a crucial position in measurement as they function as devices providing sonic tools for producing knowledge. Browsers are important in introducing new ways to know people and their behaviours and allow for a redrawing the boundaries between the private and public spaces of the (digital) body. The metrics are measured using the technology that browsers provide or operate and allow for both the measuring and recording of knowledge, but also to accelerate the listening process into milliseconds. This helped in creating different temporalities that can serve content and advertisements in the 'real-time[74] 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 internet, the measuring devices and units, as well as the infrastructure, of each of these fields is controlled by different companies. The metrics are measured using the

[74] 'Real Time Bidding' stemes from another computing term called – 'Real-Time Processing', and linked to John Von Neumann's 1940s architecture of computers, that separated the computer's processor and storage. As Gehl (2011) argues, by the 1960s computer designers "strove to make the computer feel as if it were reacting immediately to the whims of the user" (2011: 1231), a mode that felt as if the computer reacts in 'real-time, hence the name.

technology that browsers provide or operate, such as web server logs,[75] IP addresses and cookies. Advertising content and technologies (such as cookies, web bugs, pixels) are sent to users by either the first- or third-party server or the client.

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 users and the ad server: 'This Guideline requires ad counting 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). Thus, browsers were established as the standard measurement device. Here is where the notion of the digital body becomes complicated. Usually, people come to practitioners on their own initiative to solve some kind of body problem. In the case of digital advertisers, we see that the user's body 'request' to be listened to, but without her knowledge. The browser's default settings create a situation in which people technically request their bodies to be listened to, yet most 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 and understand the malfunction, here, too, people's computers operate as their bodies. This allows for closer listening and tuning in to measure their bodies over various temporalities constructed by the digital advertisers. In this (covert) way, browsers were established as the standard **measurement** device. This standardisation meant that people's computers functioned as their digital bodies *and* the measuring devices that listen to their behaviours and malfunctions. However, people were given limited

[75] Web server logs are a type of archive that stores information about users' activity. These log files are automatically created whenever a file is requested from a website. These actions and those that follow are recorded and, importantly, tend not to be accessible to normal internet users.

mechanisms to examine their own bodies, while media and advertising practitioners could diagnose them using more sonic tools.

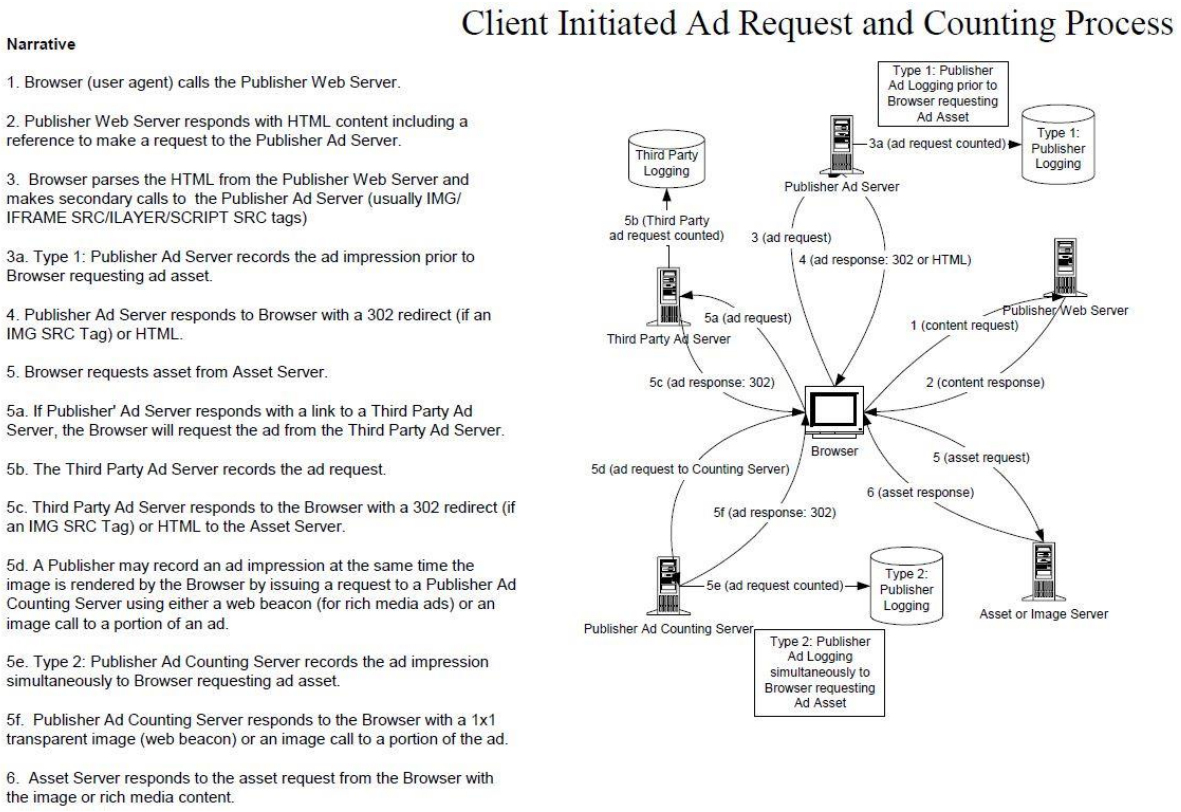

Figure 9: Client initiated advertisement request (PwC, 2001: 14).

When users perform any action on the web, the browser sends a request to have the behaviour of the user 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. Further, ‘[o]ne tracking asset may register impressions for multiple ads that are in separate locations on the page’ (IAB, 2004: 6). Thus, the advertising industry measures people’s behaviour and renders it as data, objects of scientific knowledge to mould, control and monetise. These measuring tools also help in knowing which websites, content and ads are more popular in terms of the number of people who click or view and, consequently, differentiate these spaces with higher rates.

Here, processed listening is applied to individual[76] bodies through people's browsers to create profiles and groups of audiences according to preferences or personal traits. Campbell and Carlson (2002) examined the surveillance practices of advertising strategies on the web through Foucault's Panopticon. They 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. 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 behaviour – 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 behaviour, therefore, is paramount for the smooth operation of these multi-layered communication channels and multi-sided automated markets. 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., 2001: 105). This is the reason why any behaviour that can damage or confuse **measurements** of behaviour must be controlled and avoided.

[76] Although, it took time for people to use computers individually, yet still profiles could be established.

In this context, a problematic aspect of measurement are robots (also called crawlers, bots and spiders[77]), bodies that interfere with accurate measuring and the production of data subjects and spaces. 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 behaviours. Because the web is filled with robotic behaviours, 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*. This is carried out through three main **filtering** methods: 'basic' techniques, the identification of specific suspicious non-human activity, and pattern analysis of users' activity. In the basic technique, advertisers use robot.txt files 'to prevent "well-behaved" robots from scanning the ad server' and exclude behaviours 'from User Agent Strings[78] 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 authorised 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 behaviours associated with previously identified robots or maintenance behaviours that should not count, and exclude them from the measurement procedure.

[77] These are usually programmes that visit other websites to extract different types of information for different uses.

[78] A user agent (browser) string is a way for the browser to identify itself.

Similar to physicians, advertisers produce knowledge that establishes what is a 'healthy' (human) body that should be counted and what is not. 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). Some advertisers use advanced behavioural **filtering**, which defined rules for "robots" such as a particular cookie 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 behaviours in four main ways: identifying users performing multiple sequential activities; users with the highest levels of activity; users who act in consistent interaction attributes; and 'other suspicious activity'. These four criteria also imply that there are guidelines of specific 'legitimate' digital bodies' behavioural traits. According to such standards, the way humans behave is categorised as inconsistent, low-level (frequency) activity and sporadic singular activities.

Importantly, the issue of filtration points to the difficulty of measuring accurately and the need to control people's behaviour to avoid mistakes in calculations. This is precisely why it was so important for the advertising industry to illegalise spam through legislation, as seen in the section above, and the reason why spam's characteristics in legislation were automated and categorised as bulk behaviour. Because such non-human behaviours that are not controlled by the advertising industry, such as spam, can damage the industry's ability to make sense of online behaviour measurement and create inaccurate profiles and audiences. Therefore, illegalising spam is a regulatory tool that serves to control both people's behaviours and advertising and technology companies that do not comply with these online market standards.

Measuring people's behaviour is part of an online market called online display advertising or the multi-sided market, where advertising networks argue that they trade 'inventory', which is advertisement slots. However, another thing that these ad networks trade are people. This means that the communication is conducted between advertisers and publishers, while the

‘message’ is people’s behaviour measured in standardised quantitative units, and rendered as data. The outcome of this communication is the placement of an ad that matches the supposed behaviour of users and their profiles at that particular place and time, and this happens within milliseconds with the use of algorithms.

Personalising space for data subjects

The rhythm of communication in this online market changes and accelerates as non-human actors are introduced into the multiple channels. The advertising industry, led by the IAB, standardised both people’s behaviours and advertisement sizes.[79] In doing so, they reproduced users and spaces to create a more economically efficient feedback loop, optimised options of living in structured architectures. Here, we can see how both people and spaces are **measured**, quantified, commodified, modulated and monetised in new automated communication channels. Ad networks[80] create multi-layered automated communication channels that operate by listening, measuring, categorising, recording and archiving people’s online behaviour. Hence, while the fast-rhythm communication channels were legitimised as sound, other high-tempo communications were constructed as noise and categorised as spam, and, consequently, criminalised.

[79] For a good account of the standardisation of advertisement sizes, see Gehl (2014: 95–103).

[80] Some ad networks also collaborate with ISPs in order to track people’s behaviour across the internet (A29WP, 2010: 7).

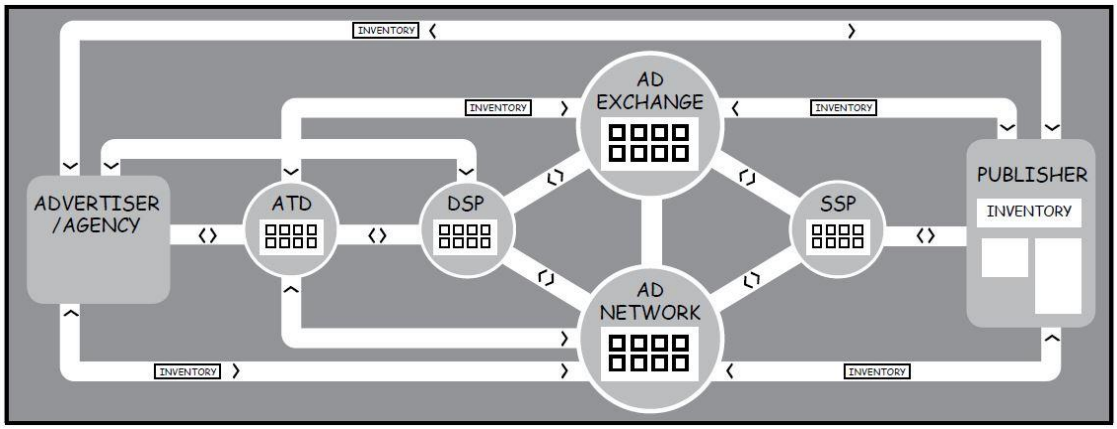

Figure 10: IAB Guide to Display Advertising (IABUK, 2005: 16).

Advertising networks were later supplemented by ad exchange to expand the new automated market, and increase the rhythm's pace even more. 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 RTB, which started in 2010, and automated bidding while connecting new actors, DSP and SSP. DSP is a centralised management platform technology for advertisers and agencies, allowing them to buy audiences in an auction across multiple suppliers. SSP is a centralised platform technology for publishers who sell audiences and spaces to advertising networks, advertising exchanges and DSP. Importantly, the extra layers of communications created by ad networks and exchanges, as well as DSP and SSP, and facilitated by third-party cookies create a new territory for financial trading that functions in a separate time and space (see Figure 10).

The name 'real-time bidding' is interesting as, in fact, it creates different temporalities, accelerated rhythms for trade, one that is so fast that humans cannot comprehend or notice it. In this way, the type of content and ads that people engage with change according to their behaviour. This means that

what affects the placing of advertisements in a particular place and time depends on the suitable audience (combining data subjects' profiles, their online behaviours, geographical location and more), as well as the highest bidding for that slot (and audience). This RTB, which relies on 'real-time processing', disguises the fast-rhythm processes that happen at the 'back-end' by non-human actors, to order the 'front-end' human experience.

But, even before RTB, timing was important. As Campbell and Carlson show, in their analysis of the advertising network DoubleClick in the late 1990s and early 2000s, the company developed a technology called Dynamic Advertising, Reporting and Targeting (DART). After collecting data from cookies and assembling initial profiles, DoubleClick aggregated their behaviours 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 this online trading territory. The 'right' people, spaces and timing are produced by a particular rhythmedia conducted by the digital advertising industry, which **filters** and reorders whoever does 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 **measured**, collected and categorised (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 for the automated market trade conducted by ad networks, ad exchanges, DSP and SSP. After the accelerated rhythm RTB in the automated market, which 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 placed in a specific location and time on the publisher's standardised space that is supposed to suit the profile of the target user. The data subject is fed back with particular content through generating dynamic web pages and advertisements that are supposed to fit them. 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).

All this happens at the 'back end', covertly, without users' knowledge; so, although cookies are based on users' browsing behaviour, they are not signalled through visual or audio queues about this conduct. In this way, the IAB's **measurement** standards documents provide the new media practitioners – advertisers – with training guidelines on the use of listening devices and the way to listen to people's digital bodies. The IAB's guidelines teach advertisers how to conduct *processed listening*, which trains different actors within the online market chain (advertising networks, advertising associations, advertising companies, and publishers) 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, categorising, archiving, and **filtering** data extracted from users, which can be done in different temporalities to produce subjects and the territories with which they engage. The time of the listening event stretches into a continuous process that creates a feedback loop of knowledge production that co-creates different objects, subjects and the architectures of these spaces.

One of the main arguments of the advertising industry against claims of breach of privacy is that users are empowered by experiencing personalised spaces. As the advertising industry argues, users 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.

Promoting ‘user control’ to control users

As the internet developed, users were given more tools to control and manage their online experience. In 1997, the IETF working group, led by Montulli and Kristol, mentioned above, recommended that users should have control and the ability to decide for themselves on the kind of communication that is made on their behalf. As they argue, ‘[u]sers may object to this behaviour 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 not impossible to do.

By creating a default of browsers accepting first- and third-party cookies, and relying on the fact that users usually do not configure those multi-layer preferences, this control tool was designed to persuade them to share (personal) information. Instead of enabling users to control their own experience, it was a mechanism developed by the advertising and technology industries to control their behaviours. In this way, first- and third-party cookies enabled these industries to listen to (measure, collect, catregorise, record and archive) users’ online behaviour. Users’ lives on the internet became objects that were used by various media practitioners for various purposes.

Montulli and Kristol’s tone regarding the IETF cookie standard changed between the versions. Their 1997 proposal suggested that browsers should ask users whether to create a ‘stateful’ session, and the default should be ‘no’. In the 2000 version, their version was much softer and lenient towards browsers’ defaults. 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

behaviour, and to train them on what they could and 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 either 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 two options from which they could choose when they lived in this territory. 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. By doing so, the EU legislation discourse on behaviours on the internet was narrowed into standardised 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 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).

Consent then, is used to transfer responsibility to individuals, while presenting it as a control mechanism that they can use over their own data, meaning their own bodies. Some of the clarifications in this A29WP document were in terms of browsers' default designs and whether specific settings constituted 'consent'. What the document clarifies is that 'consent' provides a legal ground to process personal data, which means that, again, the individual is made responsible for such actions. People are also supposed to be able to object and withdraw their consent according to the self-taught education they are expected to undertake (more on this below).

The notion of 'consent' naturalises and normalises digital advertising and technology companies' terms of use for their technologies and services, and

shows people the boundaries of their actions. 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, which gives **license** to these industries to redraw the boundaries of users’ bodies and the territories in which they live. It also marks the boundaries of what users can demand and expect from commercial actors and state regulators. What this signalled was, mainly, that what users could do on the web was not open for discussion or multiple options. Portrayed as control, autonomy and power, responsibility was moved from the service or technology providers to users, 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. This kind of approach will continue in future services such as Facebook, which provides controlled tools to live in its territory, and, often, does not respect users’ expressed choices.

As Greg Elmer shows in his research on Netscape’s Navigator and Communication web browser versions, this disruption to users’ online behaviour and experience has existed 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 movements that would repeat and help in **training users’ bodies** as data subjects and their limited options of living on the EU internet. These moves were in contrast with the A29WP position on such default settings, as it argued on the use of unique identifiers in telecommunication terminal equipment:

> The principle of proportionality implies that, making a balance between the fundamental rights of data subjects and the interests of different actors involved in the transmission of telecommunication data (such as companies, telecommunication access providers), as few personal data as possible have to be

> processed. This principle has implications on the one hand on the design of the new communication protocols and devices, and on the other hand on the content of national policies related to the processing of telecommunication data: while technology is *per se* neutral, applications and design of new telecommunication devices should be privacy compliant by default (A29WP, 2002: 3).

The A29WP acknowledges that communication technologies standards should respect privacy by default. However, the development, regulation and enforcement of these listening devices and communication channels are carried out mostly by commercial actors. In this case, for browser companies that reside in the US, the everyday management of these technologies is maintained by these actors, meaning that they are far from being 'neutral' as argued in the quote above. This highlights the way the power relation has shifted under the soft law approach towards commercial actors, who reside outside of the EU and do not conform to its legislations in this sector or to the standards offered (for example, by the IETF) that contradict their business models.

A decade after the (dot.com bubble) crash: New control technologies, same power relations

As time progressed, several mechanisms were introduced to users as control tools. One of these was outlined in the revised e-Privacy Directive (2009/136/EC), specifically related to Article 5(3), which required websites or third-party actors that sent cookies to people's computers to be transparent and to allow users to refuse according to the opt-out approach. However, as Tene and Polotentsky argue, '[b]ased on the way that this requirement was transposed into the law of most Member States, industry took the language to mean that it was acceptable to give users the ability to reject a cookie *after* it had been delivered. Accordingly, websites generally included in their privacy policies instructions for disabling or rejecting cookies' (2012: 308). Moreover, publishers and digital advertising companies still did not include

explanations of how the cookies worked or their purposes. This meant that they were still a captive audience because, if they refused to accept cookies (they were only offered the option to click 'OK', 'Accept' or 'Agree') they would be unable to use the requested website.

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 this revised 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 is how digital advertising, tech and publishing companies have been controlling the way data subjects understand what they can do and where on the internet. At the same time, they have tried to make users believe they are empowered by their agency and ability to control and choose their ways of living.

On the rare occasions when browsers did provide options to opt out of cookies, people were offered laborious and cumbersome clicks on specific cookies to opt out. This **training of the body** would be problematic in itself with the introduction of Flash cookies[81] in around 2007. Flash cookies came back to users' computers after deleting them (hence, their slang name was 'zombie cookies'). This narrowing of people's options of living online was paramount in shaping and controlling how they navigated between the structured routes of the EU online territory. Performing the role of passive machines, people were trained by a disciplinary repetitive rhythm to understand that their decisions and actions were made for them in an automated way. Importantly, users were given 'control' and at the same time were responsible for these 'freely made' choices, while in reality not knowing

[81] Flash cookies, also known as Local Share Objects (LSO), were the next generation of cookies. They could contain 'up to 100KB of information by default, compared to 4KB by HTTP cookies… Flash cookies are stored in a separate directory that many users are unaware of and do not know how to control' (Tene and Polotentsky, 2012: 293).

what was happening in the back end while they lived online. Thus, the spaces that browsers constructed were also between the 'front' and 'back' ends, leaving users with narrow and controlled listening abilities.

Another attempt to provide users with more control was developed in 2009 through a protocol standard called Do Not Track (DNT). This standard was developed by researchers Christopher Soghoian, Sid Stamm, and Dan Kaminsky, originally as a Firefox browser add-on, with a two HTTP header approach: 'X-Behavioral-Ad-Opt-Out: 1, X-Do-Not-Track: 1' (Soghoian, 2011). The decision to use two and not one HTTP headers was, according to Soghoian, based on the fact that ad networks would not necessarily see or respect these headers, which would lead to browsers not agreeing to support the add-on.[82] In 2010, the US Federal Trade Commission (FTC) published a report on privacy that proposed the DNT technical standard. Nevertheless, none of the advertising trade associations advise users to respect this standard and, in reality, few advertising companies and publishers still respect this standard.

But, it seems that, when users do decide for themselves using technologies such as ad blockers, then they are labelled an 'unethical, immoral, mendacious coven of techie wannabes' (Rothenberg, 2016). This comment was made by Randal Rothenberg, president and CEO of the Interactive Advertising Bureau, in a keynote addressed to the digital advertising council. Framed as a 'War against diversity and freedom of expression', Rothenberg responded to the growing use of ad blockers, and specifically the AdBlock Plus browser extension. Introduced in 2006, ad blockers browser extensions were a control technology that helps users bypass some marketing that is transmitted in what is structured as public space on the Internet.

This is a political feature in itself, because, to bypass AdBlock Plus categorisation and enter its white list of 'acceptable ads', big corporations such as Google, Microsoft and Amazon pay large sums of money to Eyeo,

[82] As Soghoian argues, 'The reason I opted for two headers was that many advertising firms' opt outs only stop their use of behavioral data to customize advertising. That is, even after you opt out, they continue to track you' (Soghoian, 2011).

the German start-up behind AdBlock Plus (Cookson, 2015). Thus, although 'Adblock Plus has become one of the most popular free extensions on Chrome and Firefox browsers in recent years as internet users have attempted to eliminate the interruption of advertising' (Cookson, 2015), advertisers are nevertheless ignoring such wishes and trying to block the blockers, or turn to start-ups that develop tools to bypass blocking software, such as New York-based *Secret Media*. A few years later, AdBlock Plus decided to develop its company into an ad exchange (Marshal, 2016). By doing so, the company wants to compete with advertising associations in deciding ad standards such as size, language and positioning.

In this way, publishers and advertising companies try to maintain the power they established in previous media, and develop new advertising techniques that influence and spy on users' online behaviour. This practice is carried out against their wishes or knowledge. It also shows who has the power to decide in the online territory on what are 'acceptable' and wanted (advertising) practices, keeping in mind that choosing ad blocking software is an active action undertaken by the user, since they have to search for and install it. Importantly, ad blockers use automated decision making to the advantage of the user, in contrast to browser settings, which automate the user's acceptance of multiple cookies: here, the user's refusal to receive ads is automated. Nevertheless, this automation still keeps the user's forms of expression and behaviour locked into binary routes of 'yes' or 'no' (to ads). Of course, users can also tailor and modify their ad blocker preferences; however, as discussed throughout this chapter, the default settings already select the options for users who are already trained not to check or modify them.

The monitoring, measuring, documenting and trading of users' behaviour and distorting their experience if they express their active rejection of cookies is not portrayed as unsolicited bulk communication. Moreover, the overcrowding of channels with harvested and traded user data has an effect on the energy use and efficiency of the internet in the same way bulk communication affects services. Instead, cookie communication is presented as a mechanism necessary to the internet's existence. While listening,

categorising, archiving and communicating data subjects' behaviours is becoming more automated and traded in the fast-rhythm multi-sided market, users' options to control such practices has become more cumbersome and multi-layered. Importantly, user control requires users to be tech-savvy in order to exercise agency and autonomy, and even these provide only binary and limited forms of expression and behaviour.

As Robert Gehl (2014) argues, the control narrative creates a contradiction, because trade associations such as the IAB present the subject it produces as a 'sovereign interactive consumer', a free, autonomous and powerful self-manager when it comes to their choices on the internet. This subject is also 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 activity. As Gehl observes: '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).

But as Gehl points, if the subject does not want to be educated or know about these things, then the IAB will not force them. In that case, it will be the user's fault if anything related to their online behaviour and profiling causes them harm in any way. As will be shown in the next section, the topics that EU citizens are taught are meant to help the safety of commercial actors. However, when it comes to individuals' digital bodies or being educated about digital advertising practices, then the responsibility lies with them.

Educating users for safety (of commercial companies)

An important procedure in creating the EU data subject is 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 particular ways and shape their thinking and understanding of what they can do and what their responsibility is within this territory. Here, this approach

continues in the shape of **filtering** tools and rating systems designed and operated by other players in the EU internet industry, the ISPs and copyright holders. This, then, has helped to cement and institutionalise their roles further and make it clear to users what their own role is in this territory. Although framed as 'safety' education for users, the material that EU citizens were taught was mainly about maintaining the safety of all the organisations that create, manage and control the internet: governments, rightholders (of various types of content), ISPs, publishers, digital advertisers, browsers and others.

The Safer Internet Programme that the EC developed was presented to keep the citizen safe. Ultimately, it educated and **trained 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 users' unwanted and problematic behaviour and content. This was done by providing citizens with controlled listening tools to identify and police their peers' deviant behaviours and content. 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 users were encouraged to listen and identify noisy behaviours and report them through special hotlines. Education programmes were designed especially for children in schools. This was a way to start training children from a young age about their role within the online EU territory, and, even more important, 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 Programmes was the EC's communication on *Illegal and Harmful Content on the Internet* from 16 October 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.

But this means that 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, also persist. This can also be observed by the main concerns the European Commission pointed out, which included protection of reputation and intellectual property. 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 targeting users and turning their behaviour into a feedback loop 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, terms are not defined and, under the soft law approach, this power is delegated to commercial actors. Thus, commercial actors need to form the categories and definitions of what constitutes illegal and harmful content, and then regulate and enforce it.

Clive Walker and Yaman Akdeniz (1998) examined this document, and argue that such levels of intervention show a dispersal of regulatory power as well as changing boundaries between the public and private, especially where 'netizens' (as they were termed at the end of the 1990s) are being policed. Walker and Akdeniz (1998) argue that monitoring and removing content at the national level is inefficient and expensive, especially since this is a global issue. Although self-regulatory policies are encouraged and portrayed as empowering users, Walker and Akdeniz (1998) argue that a third-party rating system can create a privatised form of censorship that threatens free speech. They quote the European Commission's Economic and Social Committee's 1998 opinion on the Action Plan, saying that the Committee wes 'worried that the possibility of Internet Service Providers using filtering and rating systems at the level of entry would render these systems, dubbed as "user empowering", an instrument of control, "actually taking choice out of citizens' hands" … The Committee considered it highly unlikely that the proposed measures will in the long term result in a safe Internet with the rating and classification of all information on the Internet being "impracticable"' (cited in Walker and Akdeniz, 1998: 11–12). Despite such observations, the action plans continue to this day.

One of the most important points in this document pertains to 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 user's role is to detect and report illegal and harmful content to 'hotlines'; by doing so, they operate in a similar way to the telephone operators as feedback loops helping to improve and stabilise the online trade territory. In addition, 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, users 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 users to understand how to behave on the internet. Such 'solutions' under the soft

law approach authorised commercial actors to define illegal and harmful categories according to their economic interests.

Furthermore, the European Commission argued that it is desirable for users to be identified because, although they are entitled to freedom of expression, they 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. But users 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 users 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 behaviour across the web for similar reasons. 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 advertisers, 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 users to their 'offline' and 'online' identities (something that Facebook will continue, as will be shown in the next chapter).

One of the options the EC proposes to control illegal and harmful content is **filtering**, which takes away responsibility from the government and 'empowers' parents as a self-regulation mechanism. **Filtering** can be applied at different stages of communication, by either parents or ISPs. This model consists of three main mechanisms: blacklisting, whitelisting and neutral labelling. Blacklisting is when websites are included in a blacklist and then access to them is blocked. Cyber Patrol, for example, which was introduced in 1995, contained 12 categories for blocking: 'violence/profanity, nudity, sexual acts, gross depictions, racism/ethnic impropriety, satanic/cult, drugs, militant/extremist, gambling, questionable/illegal, alcohol/tobacco' (Commission of the European Communities, 1996: 20). Interestingly, users could not choose to block advertisements at that time; this content was agreed by the EU and the other interest groups involved as wanted communication. Just as Foucault argues about biopolitics, people have the

freedom to choose but the available options are already structured and controlled.

Once more, people are presented as powerful subjects, free to make informed choices about their online experiences. However, the options presented to them are already limited and any action they make, even if under default settings, is considered to be their responsibility. This shows that when people want to be able to have more agency in their choices then these are hidden or not available. If a person bypasses such options and uses encryption or a routing mechanism, it might appear as though they are a criminal because they might have something to hide. Whitelisting blocks all content on the internet, and users are allowed to access only the type of content that is authorised. Neutral labelling is a mechanism that labels and rates sites and then lets users decide how to use them. One example is the Platform for Internet Content Selection (PICS), which was introduced by the 3WC on May 1996 in order to establish a global standard. PICS 'effectively "tags" sites with "value-neutral labels"' (Commission of the European Communities, 1996: 22), and these are used by either the publishers or third parties.

The Safer Internet Action Plan started in 1999 and consisted of three programmes: the Action Plan for a Safer Internet 1999–2004 (276/1999/EC), the Safer Internet Programme 2005–2008 (Safer Internet Plus) (854/2005/EC), and the Safer Internet Programme 2009–2013 (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 users on how to use the internet in a safe way.

On 25 January 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 programme was set to run between 1999 and 2004. As Article 2 indicates, 'The action plan has the objective of promoting safer use of the Internet and of encouraging, at European level, an environment favourable to the development of the Internet industry'. This Act promoted industry self-regulation through three main approaches, **filtering** tools, rating systems and awareness programmes, in order to create a frictionless competitive environment for the industry. It also suggested that 'a system of visible "quality-site labels" will be encouraged to assist users in identifying Internet service providers that adhere to codes of conduct' (Ibid). As with 'control', 'safety' was used here to maintain the digital industries' stability and carry on the same benefits these yielded offline into the online territory. Users' safety was sold in 'awareness' of the things they should categorise as deviant, spam or noise.

The Safer Internet Plus Programme was approved on 11 May 2005, and was meant to run until 2008. This programme 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 programme 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 categorise the EU online territory in a consistent way, but, since most of the categorisation 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 atempt to go beyond merely illegal content, but it is not clear in what ways. Further, although the European Commission emphasised the need to address issues of data protection and mention the e-Privacy Directive, it did not offer any education regarding other options of behaviour online, such as anonymity and encryption, but only in relation to child grooming. 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, 2000: 53). It 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 within any of the action plans. Here, Foucault's biopolitics emerges again, as specific ways of living are promoted while others are not.

The Safer Internet Community Programme (1351/2008/EC) was approved on 16 December 2008, and was meant to run 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. This 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 programme was the establishment of a knowledge database that provided the means for 'taking 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 behaviour and cooperating with industry on the agreed objectives of those codes' (1351/2008/EC).

Part of creating such a database involved collecting statistics and analysing 'trends' happening in member states: 'Evolving technologies, changes in the

way the Internet and other communication technologies are used by adults and children, and shifts in societal behaviours are leading to new risks for children. 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 behaviours are collected; however, as the document indicates the content of such data was 'only' shared with 'stakeholders' (EC, 2008: 8). This meant that another sonic epistemological instrument to listen (statistically **measure**) to people's behaviours online was developed, whereby the results and what was done with them was unknown to people and only shared with commercial actors. Although the safer internet programmes were meant to be an educational programme 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). Users 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 users with limited and controlled listening capacities to monitor illegal content, they were trained to become feedback loop filters that stabilised the EU market.

Conclusion

This chapter focused on media practitioners, mainly the digital advertising industry, publishers and technology companies (such as browsers), and how they deployed the seven epistemological strategies on users in Europe and

produced a particular online territory. The EU internet territory was produced by **new experts**: the IAB, the FEDMA, web browsers, and publishers who wanted to be able to (re)produce data subjects and monetise them in the new business model they promoted after the dot-com bubble crash. Such media practitioners received the authority to conduct rhythmedia thanks to the **licensing** given to them by the European Commission's soft law approach. This approach meant that, instead of having clear laws and rules, flexibility and ambiguity would be the new stage of governing. Here, power was enacted by not defining things and commercial actors being able to provide their own definitions according to their business models, then changing and adapting these along the way as they saw fit.

Discipline came in the shape of **training the body** and educating EU citizens as part of the Safer Internet Action Plans. Biopolitics was used in various ways, such as: keeping law definitions ambiguous to cater current and future threats to commercial actors' business models, the design of browsers, promoting a narrative of control, and, ultimately, producing a particular territory. These transitions of power gave a **license** to media practitioners to produce people and the EU trade territory. This enabled commercial companies to control and order the architecture and the way people communicated in it. 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.

One of the key ways to create such an online trade-friendly territory was by deciding what created a 'burden' on this infrastructure, producing a certain rhythmedia that ordered legitimate communication while illegitimising others. The two main characteristics that were important when classifying forms of behaviour on the internet at the end of the 1990s and beginning of the 2000s were whether they created a burden on the infrastructure and whether the communication was received with consent. The digital advertising industry lobbied the IETF and the European Commission and bypassed both of these characteristics for the industry's practices. The first characteristic was tackled through pressure to establish the IETF cookie standard, which meant that

browsers' default designs would discard cookies after a certain amount of time after being sent to users' computers. In this way, cookies managed to avoid being a burden on the infrastructure, and they avoided being noisy in the EU territory.

The second characteristic was tackled through lobbying the European Commission and constructing false divisions between private and public spaces on the internet. This was another strategy of **restructuring the online territory** and the kind of behaviours that users could engage in. Influenced by the advertising industry lobbying, EU legislation associated cookies with public space so that users could not refuse advertisements, while spam was associated with private space where user had to provide consent. The EU legislation did that by arguing that private space such as email had a specific address that could be associated with a particular individual, while in other situations, such as browsing websites, users could not be identified according to an address because the users were 'anonymous'. However, since user's IP addresses were numerical identifiers people could be identified anywhere across the web, no matter which space they used.

In fact, cookies rely on (re)producing specific individual profiles according to behavioural advertising, the way the advertising industry pushed to fund the internet. Cookies, along with fine tuning of web-bugs communicate users' actions across the web and then help create such profiles. Therefore, it is paramount to identify users all over the web. In this way, public places on the web were legitimate places for commercial practices while private spaces were not. Such a distinction was paramount to legitimising cookies as a sonic device that enabled EU citizens' digital bodies to be listened to. This knowledge, then, was used to reproduce users according to the prescribed profiles the advertising industry created and then fed back according to desired audiences.

Similar boundaries were constructing what each actor in this online territory could listen to. The lobbying of the advertising industry and the dominance of browsers also meant that, although the 1997 IETF cookie standard

recommended having a visual display of the 'back end', this suggestion did not materialise. In this way, the advertising industry and browsers wanted to control and limit people's listening abilities. This meant that users could only access and experience the web in a restricted and narrow way and communicate with their computers and other users without knowing what happened in other layers.

However, if people wanted to make transactions, then, from 1995, they would be given visual cues called SSL on their browsers, which told them that this was a secure and private action, meaning that no one could listen to this behaviour. By introducing this default design into browsers, Netscape signalled to users that, when they made purchases online, it was important to be encrypted and 'sound-proofed' from other entities; i.e. users' digital bodies produced as the consumer subjects, would be safe to buy.

The second section of this chapter showed how these media practitioners produced data subjects in the EU in three main ways. At the beginning of 2000s, the internet was a relatively young technology and the **new experts** wanted to make it economically viable. The transition from the business model of subscription to free content and access by (behavioural) advertising turned users into the currency. But, as with other currencies, there needed to be a unified agreement about users' worth so they could be used, transferred, exchanged and monetised. In order to do that, the advertising industry needed to standardise new processed listening capacities, which involved **measuring** tools and units.

To produce knowledge and make sense of users' behaviour in the EU online territory, the advertising industry conducted a special metrics standardisation project that had two stages, one in 2001 and the other from 2003 to 2004. This project aimed to develop standardised **measurements** of the five frequently used metrics on the web: clicks, ad impressions, total visits, unique visitors and page impressions. Measuring was carried out using the several tools provided or facilitated by browsers, such as server logs, IP addresses, cookies and web bugs. This would enable the advertising industry to commodify quantify, compare, transfer, monetise and bid such data

subjects and trade them with other advertising companies in the accelerated rhythm online market that the advertising industry and publishers operated through cookies.

Different temporalities were created to produce users and territories. The digital advertising industry decided on particular times when a **measurement** would be taken, and the frequency and time frame a particular behaviour would count. For example, ad and page impressions were counted after users had spent several seconds on them. There were also 'time-based rules' of how to count visits, i.e. inactivity of 30 minutes would result in the visit being considered as terminated. Another temporal ordering was the measuring process being stretched over time because producing data subjects depended on having more and more information on users' actions to build richer profiles and harnessing these for multiple uses. This meant that the time of the listening event stretched into a continuous process that created a feedback loop of knowledge production that co-created different objects, subjects and the architectures of these spaces. It also meant that listening was done in several spaces, following the sound of the subject across the different sites visited.

A user's behaviour was then matched to characteristics of specific audiences. For example, single young women who liked sports and healthy food were fed back with a particular design of content and ads that advertisers and publishers thought matched such audiences. This meant that, in the process of (re)producing the data subject, there was a constant feedback loop whereby the profiles of individuals and audiences were in a constant state of (re)construction back and forth from micro to macro. Similar to the personal experience and service that Bell's operators were encouraged to provide, here personalisation as an experience is also the promoted way of living.

Measuring behaviours had to be accurate, especially in light of the amount of non-human actors in the online territory such as bots, 'spiders' and routine actions that companies deployed on their services. Only the sound of human behaviour counted. Therefore, advertising companies and browsers wanted

to **filter** non-human behaviour, and developed three methods to identify such actions. These methods, called filtration, were based on assumptions of the normal human behaviour rhythm on the internet, and they were meant to identify any deviation from this and categorise it as robotic. The first method, 'basic filtering', means exclusion of robot.txt files, as well as exclusion of user agents' strings that were either 'empty' or included the word 'bot'. In the second method, the advertising industry included the detection of suspicious non-human activity according to the IAB's Robot List. The third method was a pattern analysis of users' activity that analysed the rhythm of users' behaviour online, with the characteristics of acting in multiple, consistent and high-level ways. All these methods constructed specific temporal rules for robotic or human behaviour on the internet. Listening to users' behaviours in order to produce knowledge was also conducted by the EU, as the 2008 Safer Internet Community Programme indicates. Statistical analyses were conducted continuously and only shared with stakeholders, yet again to establish a normal curve of the 'healthy' data subjects and to detect irregularities according to temporal characteristics.

Similar to the previous chapter, here, data subjects operated as part of the communication channels and were educated to listen to others' behaviours and **filter** unwanted and problematic behaviour and content on the internet. The EU chose to develop the Safer Internet Action Plan Programme to **train people's bodies** into filtering machines of copyright content. Users were also given hotlines to report on problematic behaviour of different sorts, some criminal and some concerning intellectual property. Another mechanism introduced as part of the Safer Internet Action was the rating of websites and content. Yet again, such filtering tools were portrayed as control mechanisms, but they mainly helped users control and monitor their peers in a biopolitical way.

Another filtering device was provided to parents who wanted to shield their children from problematic material by using filtering technologies that ISPs or browsers could deploy. In all of these control mechanisms, the categories for the types of content (for example, violence, gambling, alcohol) was already chosen for parents, so all they had to do was 'freely' choose from prescribed

options. This also helped in educating them on the kind of content that was wanted and that which was unwanted and should be reported. Importantly, advertisements were never part of the options presented for reporting. This was similar to the questionnaires filled out by NYC citizens about noise sources in the city; NYC citizens already had the options laid out for them and they only had to mention the number of decibels for each source.

Because accelerated bulk behaviours were considered to be robotic, the experts also wanted to **train the digital bodies** of EU citizens to avoid behaving in ways that could confuse measuring. Therefore they categorised fast, excessive-rhythm actions as spam. **Training digital bodies** was carried out using the architectural design of the browsers as well as the Safer Internet Action Plan. But another way was through providing people with control mechanisms. Such mechanisms came in the shape of browsers' default settings, which prescribed the preferred way to behave, yet offered 'empowerment' and freedom of choice in laborious setting tools within browsers, which enabled users sometimes to reject third-party cookies. Other mechanisms of control came with the introduction of the 'Agree/OK/I Consent' notification that websites had to present when users visited websites following the revision of the ePrivacy Directive in 2009. In this way, EU citizens were trained to click on such buttons without knowing what cookies were, how they worked, who the entities were that operated them, and, importantly, the consequences of this communication.

These control mechanisms, then, and especially the notion of 'consent', **trained people's bodies** to understand that they had power and choice by clicking. Importantly, they carried responsibility of the consequences of every action. The term 'control', here, refers to the control of users' behaviour, not to giving them control. This control was also meant to persuade users to provide more details, which were then listened to and helped in producing them as consumer subjects. Another part of the training was to keep users' 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 territory as a way to produce data subjects and, consequently, provide economic benefit and funding for the internet.

Discouraging, illegitimising and illegalising bulk communication was also a way to individualise behaviours and **de-politicise** actions that could be carried out in groups. As the previous chapter showed, un-crowding parks that were public spaces meant for demonstration was achieved by redesigning them 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 personalised 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.

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 practitioner, we saw here a decentralisation of several power nodes that expanded their listening capacities. In the next chapter, we will see a recentralisation of such power that creates a new power balance of listening capacities.

Chapter 6 – Engineering the social (media platforms)

Introduction

This chapter focuses on social media platforms (SMP)[83] as the dominant technologically mediated experience of the 21st century, and the way that such companies (re)produce information and behaviours, the way they affect the users who engage with them, and the effects they have on the architecture of these services. This chapter looks at Facebook and the processes of distinguishing between wanted and unwanted behaviours, and the different factors that affect the way that these can be performed and understood within its territory and beyond.

Facebook was chosen as a case study as it is the most dominant SMP (in terms of the number of users,[84] engagement and revenues), and presents a new kind of online 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, we see a different kind of **restructuring territory**, specifically how these channels are centralised back to a main node, which is Facebook. Because of its centrality to many people's lives (mostly in western society), the service provides a case study of strategies deployed on territories that attempt to construct forms of behaviours through a media technology. 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.

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[83] This term has been criticised in terms of the politics behind platforms (Gillespie, 2010), and the use of the word 'social' (Couldry and Dijck, 2015). Nevertheless, I find it to be useful as I emphasise the politics of this platform and how it constructs sociality so that these serve the argument.

[84] According to Facebook's statistics, in June 2017, the platform had 2.01 billion monthly active users, and 1.32 million daily active users (Facebook, 2017).

Facebook offers (new) ways and spaces for communicating between entities, human and non-human, in the territory it produces. Facebook creates means of (self) expression,[85] action, participation, channels of communication and the architecture that enables, controls or restricts them. Facebook structures mechanisms and tools that enable people to present themselves and interact with others in its territories by pushing specific formats as expression. This is similar to Bell's operators who had to express themselves through the 'voice with the smile', meaning in a positive way, and in the same way as the 'Like' button. By doing so, the service is **training the (digital) body** in various ways. However, these expressions and other activities come with limitations and sometimes are not allowed altogether. By stripping away contexts, nuances and feelings from the way people can present and express themselves, Facebook **de-politicises** its users through a biopolitical mechanism.

Importantly, Facebook limits, constructs, moulds, manages and commodifies the way humans and non-humans can behave within its territory and beyond. For example, Facebook trains users to report their friends and other objects that do not behave in an appropriate way. By doing so, users join Facebook's algorithms and content moderators and become **filtering** mechanisms. They are also trained to become the communication channel and the filters and their actions are de-politicised. In this way, there is a continuation of Bell's strategies.

Facebook developed several channels between different actors such as advertisers, publishers, users, third parties and the service itself. Through these channels, much like an advertising network, Facebook is able to listen to users' behaviours within *and* outside its platform. Commercial actors such as brands and advertisers that want to use Facebook's territory and population for economic purposes need to operate according to the

[85] These are, in fact, two features that sometimes intertwine with each other. On the one hand, users' 'expressions' provide both content (posts, images, likes) and 'back end' data (actions that are not presented visually). On the other hand, there is also a construction of a 'self' that is subtle, like 'nudges', which shape users' being in a more biopolitical sense.

licensing that Facebook offers, such as sponsored stories, promoted pages, obtaining more Likes, boosting posts and Impression Tracking Data certification. These multiple actors are intermingled and are not always aware of the identity of the sender and receiver of the message, what the message is, what the communication channel is or the purposes behind each communication channel. The way that all these actors can *live* within these territories is governed by the modes of governmentality that are conducted through various degrees of processed listening and rhythmedia.

The more an actor can listen to and, therefore, know and produce knowledge, the higher they are positioned in the power relation constructed by Facebook, while the service itself holds all the cards. However, as mentioned in the previous chapters, here, knowing a population is achieved through practices of listening. Facebook, as the owner and developer of its territory, holds most of the power, as its **expert** engineers also develop ways of listening to its subscribers' behaviours, as well as non-subscribers within and outside its territory. Facebook conducts this **measurement** of people across the web using several tools, mostly advancements of already existing sonic devices developed by the digital advertising industry and browsers, which were discussed in the previous chapter. With Facebook's social plugins, which appear both in its territory and across the web, the service sends cookies to users' devices and listens to their behaviour inside *and* outside their territory. Integrating social plugins allows users to connect their Facebook profiles to their behaviours across the web, and act according to the standardised actions (Like, Share, Comment) Facebook prescribes in those territories as well. This means that any publisher, app, game or service that integrates social plugins enables Facebook to listen to users who use their territory across various locations.

With the penetration and wider use of mobile phones, an increasing number of people are spending more time on Facebook,[86] stretching the time they

[86] According to PEW Research Centre (Duggan et al., 2015), in a survey conducted in September 2014, Facebook is the most popular social media site by far. According to the report, 71% of internet users are on Facebook and those users are very active on the

spend on the app, without feeling as though they are 'online' while in the territory.[87] This allows the company to **measure** users' behaviour as long as they are online, and thereby manipulate various temporalities for its business model. Further, similar to browsers, Facebook also uses server logs that document every kind of behaviour users carry out within its territory. So, even when not clicking on a particular object, a user's every move is archived in a knowledge database that is then harnessed to reproduce them and their personalised territory. To understand what users think and how they order content on Facebook, the service sends questionnaires but also pays particular users to provide more elaborated views. Similar to the questionnaires circulated by the NAC, these surveys help Facebook adjust its system for monetising purposes while making sure that what it thinks is important and the right way to behave will be the main possibility of living in its territory and beyond.

This chapter shows that the power relation that Facebook establishes through its ability to listen to people in various locations 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; 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 users, 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' behaviours 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.

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platform, with 70% daily engagement. As the report states, 'Facebook acts as "home base"' (Duggan et al., 2015: 3).

[87] People in third-world countries think that Facebook *is* the internet, and, when asked, they do not think they are 'online' (Mirani, 2015). This will exacerbate with Facebook's Internet.org project.

Filtering the unwanted using four mechanisms

Filtering is an important strategy for keeping Facebook's multiple communication channels as productive and efficient as possible. Filtering consists of human and non-human actors, paid and unpaid, who have different considerations and motivations but are all ordered in a particular rhythmedia. In order to operate as good filters, according to Facebook's business model(s), all actors involved, both human and non-human (though non-human and paid workers are easier to control as Facebook has direct access to change and adapt them), need to go through training programmes. Such education is meant for all actors to internalise the correct ways of behaving in the platform's territory, but it also turns them into educators of other users who do not obey these standards. Furthermore, these training programmes educate the actors in how to order and report content on the newsfeed to make it more interesting and thus encourage people to stay longer, and not leaving the service altogether.

The separation between signal and noise, here, is complicated as what constitutes a disturbance is decided by multiple actors, and not only by the owners and inventors of the medium. What needs to be filtered also changes with time because what is human and social changes as well. This means that filtering is a constant process that adjusts according to new and emerging trends, 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.

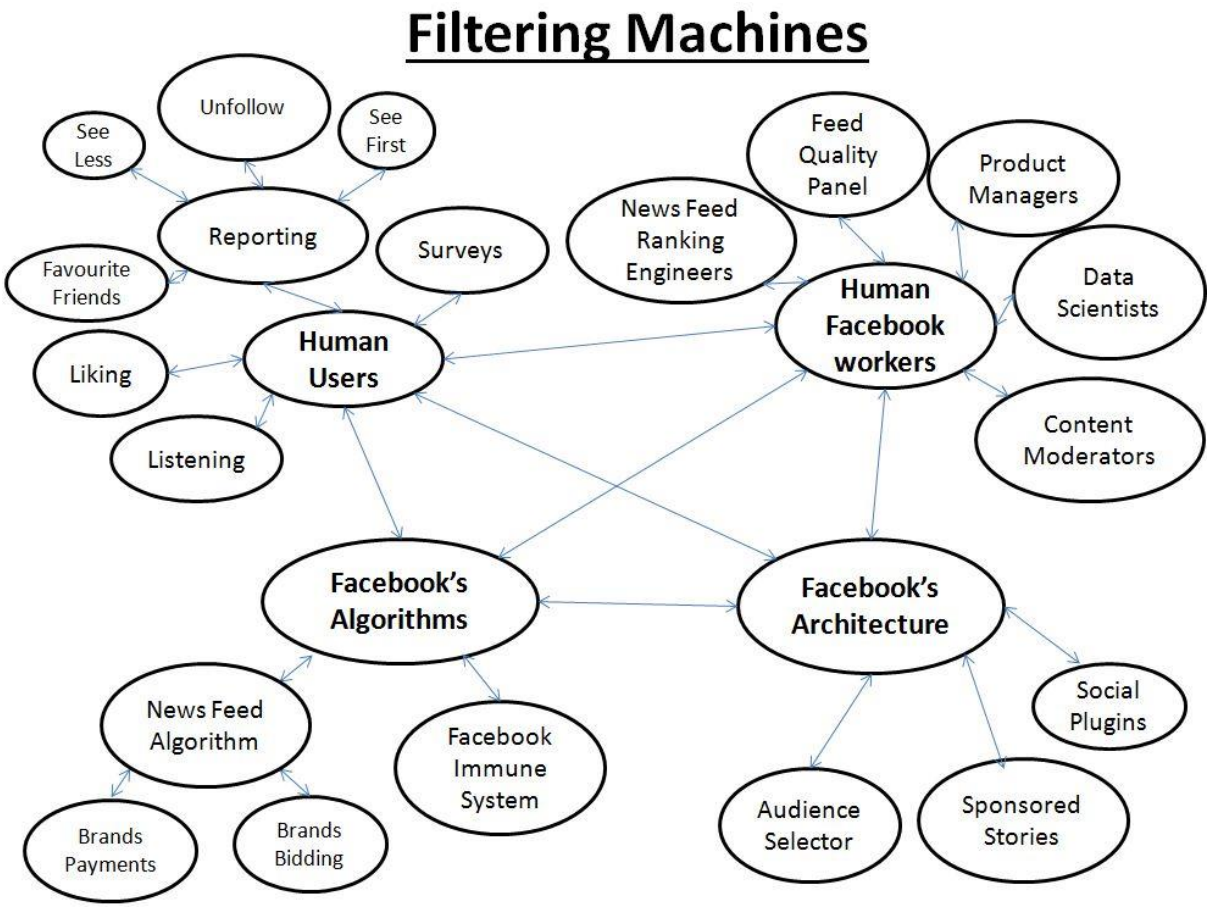

Figure 11: Facebook's filtering mechanisms.

To **filter** unwanted content and behaviours and order its territory accordingly, Facebook (re)produces four main filtering mechanisms, which function in a recursive feedback loop (see Figure 11). The first two are Facebook's non-human actors: 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 actors. These include the free labour[88] 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

[88] Free labour in the context of new media is a concept that has been developed by Tiziana Terranove (2000). Coining the term even before SMP 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.

to other users. The second group of human actors includes Facebook's human labour workforce, which consists of low-waged, outsourced labour that conducts content moderation, as well as in-house raters called the Feed Quality Panel. Each filter will be discussed below according the order outlined above.

Changing architecture for profit

As shown in the previous empirical chapters, the architecture that media prescribe is not neutral. Facebook's architecture is also not neutral, and it is influenced by the filtering mechanisms (among other mechanisms) that will be discussed below, including Facebook's users, bidding for ads, newsfeed algorithms and the platform's CCM. This section shows how Facebook's powerful position is established through its ability to listen to people's behaviour within *and* outside its platform. This enables the company to produce knowledge that can then inform the design of specific features. By modifying its multiple communication channels and features, Facebook can shape, control and manage users' self-presentation, expression and the tools they can use. Importantly, Facebook produces the architecture and temporalities of users lives in the platform. In this way, Facebook (re)produces subjects that, through architecture **training of the body**, behave in a way that creates more value to Facebook. As the company changes its design, it conducts a recursive process of a feedback loop in which behaviours and architecture are in constant adjustments; it conducts rhythmedia.

According to Facebook's Statement of Rights and Responsibilities, in the 'Disputes' section, although it '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 has aimed to influence users' behaviour to increase the value of the service. Following the public outrage after its '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 and, therefore, mean that the architecture should yield as much profit as possible from the free service it offers to its 'normal' subscribers.

The research that Facebook conducts is intended to provide advice for platform designers on how to structure architecture in a way that will influence users' behaviour to benefit companies' 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' (Burk et al., 2009: 1). This 'experience' 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).

A paragon example of a design feature intended to influence people's behaviour on Facebook is the newsfeed. The newsfeed feature was launched on 5 September 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, as Facebook researchers argue with regard to motivating newcomers' contributions on the platform, it is also meant for 'social learning', whereby users learn how others behave on the service (Burk et al., 2009). Social learning, as Facebook researchers argue, is about listening to other people's behaviour without distraction, remembering peers' behaviour and performing the same behaviour. To have a space where people can learn the correct way to behave, Facebook introduced the newsfeed, which 'allows 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' (Burk et al., 2009: 2). By

introducing this feature, Facebook hoped to teach users how to behave on its platform, learning by listening to peers behaviour.

In many of Facebook's research findings, SMP designers are advised to encourage users to contribute more by either influencing the architecture or users' friends. Facebook researchers advise 'nudging friends to contact another user' (Burk 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' (Burk et al., 2011: 9). Here, Facebook **reconstruct its territory** and nudges users and their friends for more engagement, and hence more value for the company.

Another example of how Facebook's architecture influences users' behaviour is given in Benjamin Grosser's (2014) research on the Demetricator. Grosser shows the effects of Facebook's metrics, the way that its architecture enumerates social interactions with its standardised measuring unit the Like, and how this influences people to behave and interact in certain ways. Grosser developed the web extension, Facebook Demetricator (2012–present), which removes all metrics from Facebook's interface in order to examine how the lack of numbers changes users' experience. For his research, he interviewed users 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 a market architecture that influences the way people feel and behave. Watching 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 behaviours, and, perhaps more importantly, as subjects that develop reactive and compulsive behaviours in response to these conditions. In the

> process, these metrics start to *prescribe* certain kinds of social interactions (Grosser, 2014).

Similarly, this section looks at 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 indicative examples of the processed listening in which multiple practitioners listen to users' behaviour in different spaces and times. These examples also show the way that the recursive feedback loop of the listening produces the architecture and subjects by conducting rhythmedia.

Controlling who can listen to you

The Audience Selector feature offers Facebook's users the ability to control the kinds of people that 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 'made 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 users to share more and hence increase the value of the platform.

As I showed in the previous section, promoting users' control through browser settings was meant to make users feel as though they were empowered and to encourage them to contribute more personal information. Here, we can see similar strategies in which this feature is presented as a control and empowerment tool. However, as with the cookie control

mechanism, here, too, the responsibility of what happens with the information shared lies with users. In this context, as well, what the service does with the information is unknown to users so they might not know if they should share in public or private, because the consequences of this option are unknown to them. In addition, the definitions and the companies involved in these trade territories are often changing. What users cannot control is which third-party companies listen to their behaviours, because they are not offered such an option. What people 'share', and the knowledge about them that can then become a commodity is also unclear, since this can be a wide range of inputs, visible or not, given by an individual.

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 13 November 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 its users, but these have limitations when it comes to specific categories of information that will always be public. Moreover, the default setting of Facebook is public, which means that to change this, users must be aware of the consequences of what happens when information is public (some of these are outlined in this definition; for example, public information can be associated with people off Facebook). If users 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). 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 chosen for them. What they do need to choose is whether they *do not want* something to be public, and that is restricted to what Facebook enables to be non-public.

But the reasons behind providing the audience selector as a feature on Facebook's architecture is not about empowering users 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 users' privacy, it is an architecture feature that is a design solution to the problem of users 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).

Facebook's researchers, Das and Kramer, give the example of an undesirable behaviour 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 users' 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 and, by doing so, providing a richer data that media practitioners can use to produce subjects to promote to or trade with. Other architecture design features are also meant to bring more value to Facebook; here, it is by using people's friends as channels of advertising.

Channelling ads through your friends

Sponsored stories is a feature that was introduced on 2011. This feature shows advertisements on the newsfeed by using users' 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 users' names and photos following their interaction with this brand (Like, Share or Post). As Facebook describes in the *Advertising and Facebook Content* section, 'In addition to delivering relevant ads, Facebook sometimes pairs ads with social context, meaning stories about social actions that you or your friends have taken'. This means that users' behaviours and interactions with other people, objects, pages, brands and groups can be used to promote products and services without their knowledge or consent.

But users are not allowed to monetise 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 users create a **license** to make profit from themselves in the shape of Pages. Facebook, on the other hand, can monetise users' profiles and their relations. 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.

Some people in the US, as Eran Fisher argues, did not approve of this practice, and four months after the introduction of the feature, in April 2011, these users sued Facebook. According to Fisher, the users 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 monetisation would take place. Further:

> 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).

Thus, everyday life, and, especially as Foucault argued, users' relations, have been the main target of Facebook to influence, shape, manage and control. This is because Facebook has an economic value it can make from such relations, which are rendered into measurable quantified commodities. This value is produced in three ways in the case of Sponsored Stories: first, by users' engagement with brands, services or events; second, users' friends' networks as potential audiences for advertisers with well-defined profiles for customisation; and third, transforming users into commercial channels, connecting between the advertisers and users' friends, while exploiting their relations and behaviours across the service without their knowledge. Since their personas, preferences and connections are monetisable, it is paramount that they are as up to date as possible. Therefore, Facebook encourages its members to endlessly modify, change and polish their profiles.

Beyond the information users provide by 'living' on Facebook, such as Liking, Sharing, commenting and listening, users 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 and relationship and so on. In addition, users are also encouraged to share their feelings and their preferences such as favourite books, films, TV programmes, 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 any type of action but also infers future actions according to previous data it has on its users. The more knowledge and accuracy users provide in their profiles, the better Facebook can target them or their friends. To push users to provide more details, Facebook added a feature to ask friends to give more details (see Figure 9). In other words, if Facebook users are not willing to behave in the desired way then their friends can be mobilised to help them do so.

Figure 12: Ask your friends for more information (retrieved 30 March 2014).

Facebook's researchers have conducted experiments to understand how different visual displays of Sponsored Stories, which they call 'social advertising', influence the way users respond to these ads. In other words, Facebook wants to examine what architecture design changes are needed to yield the best ad optimisation. 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 its framing of 'organic' below) and Sponsored Story in two ways: by the appearance of a story and by positioning the sponsored story on the newsfeed that is designed specifically for 'organic' stories made by users' friends. 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 users have become accustomed to, to influence them with advertisements. This is interesting considering that, on 14 November 2014, Facebook's newsfeed announcement argued that, from survey the company conducted it was discovered that users want 'to see more stories from friends and Pages they care about, and less promotional content'. But Sponsored Stories, which still continue, are not stories from Pages that users Like but rather paid stories that their peers Like.

Similar experiments appeared on my newsfeed during October 2015, usually during the night, using my friends' names as people who Like a brand to use them as promoters without their knowledge. Interestingly, posts without any friends related to the brands also appeared on my newsfeed. In this version, users' photos do not appear, only their names, and not one name but several. The 'sponsored' marking of the ad is written in a very small font compared to the main text and its colour is light grey, which also makes it almost transparent. There is no possibility to mark this ad as spam, but it can be hidden.

'Social advertising', which displays social context that friends 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 users have clicked on the ad or Liked the product/organisation.

The researchers also examined the way the strength of the relationship between friends can influence users into higher engagement with ads (which is measured by clicks on ads or Liking a product). To do this, they measured the frequency of communications, which included commenting on or Liking posts, but also private messages, within a period of 90 days.

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). Social cues that are indicated through the design of sponsored stories, then, are a way to use people as channels to influence their peers. What these experiments show is that users' behaviour is mobilised to influence their friends' behaviour. Following Foucault, here, power is enacted over users' actions and, in particular, their relations with their peers through special architecture design. This is done by both Facebook and advertisers,[89] who can listen to people's characteristics, behaviour and the strength of their ties in order to produce advertisements and also to turn users into communication channels that can be mobilised for advertising.

Expanding listening capacities through social plugins

The last principle on (the already removed) 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 media standards, including currency, legitimate/appropriate behaviour, trade practices and products. This practice is mainly enabled through Facebook Connect, which was launched on 4 December 2008, and was the next step after social buttons were introduced in 2006. Facebook Connect turned the company into the central node on which data is

[89] Facebook introduced the Conversion Lift feature to advertisers on 29 January 2015, which delegated controlled abilities to conduct experiments on users. Conversion Lift allows advertisers to create a campaign and have a randomised test group (people who see the ad) and a control group (people who do not see the ad).

communicated to and from the rest of the web, preparing the ground for the social plugins integration with the rest of the web in 2010.

Figure 13: Facebook Connect (Chan, 2008).

During Facebook's third conference, *f8*, in April 2010, Facebook launched its Open Graph and provided an Application Programming Interface (API), which enabled third parties and their developers to receive data from Facebook and feed it back, while integrating into its Open Graph and embedding it deeper within the web's architecture. As Facebook states in its blog, the Open Graph started with the Social Graph, which was 'the 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). The social graph connected between 'friends' on Facebook. But with the Open Graph, the connections go beyond friends and include various types of objects and activities conducted within Facebook's territory and onto the entire web. This was done to stretch its knowledge base beyond a confined space, as in a disciplinary mode of governmentality, and onto wider spaces, as with biopolitics. Here, we see how listening was stretched across multiple spaces.

The Open Graph includes Facebook's subscribers' data, which includes information they share and their behaviours, which are rendered and **filtered** according to Facebook's architecture, tools, design and currency. As Taina Bucher explains, the '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 into its own standards, and users' 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' online means that connections between people and objects are **filtered** through Facebook's territory, **measuring** units and value. The way to establish these connections was with social plugins. When websites, platforms and apps install social plugins, they establish a two-way communication channels between their territory and that of Facebook. So instead of websites linking to each other in a decentralised way using hyperlinks, there is a double process of decentralising and recentralising from and to social media platforms. As Zuckerberg argues above, 'social' means personalised experiences. Facebook's Open Graph creates a particular type of 'social' compared to the previous (relatively) decentralised web because all roads go from and come back to Facebook, making it 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 application* 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 shows, there is no need to click on any button in order for the social plugin to enable the communication channel(s), 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 emphasise 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, '[b]y 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' and that, '[m]any 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 in order to gain more traffic and insights on people's real identities.

But 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; here we see similar strategies. The service aims to standardise 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 Chapter 5, while the advertising industry wanted to standardise listening tools and units that all digital

advertisers, publishers and other companies would use, Facebook aims 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 have been rendering users' online lives conducted outside Facebook's territory into its units and integrating these back while gaining more knowledge about their actions across various spaces and thus more value. This kind of social engineering has become a primary tool for the biopolitical management of Facebook's users, because, by creating value from human interactions, it wants to reproduce and **filter** them. So, just as Foucault argues that nation states govern, manage and control bodies, here we see similar practices enacted on people's digital bodies in the more powerful, broad and mutating territory that Facebook created online. For example, in its *Information we received and how it is used* 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.

Here, we can see how Facebook has delegated some listening capacities to advertisers who, in turn, help the service to improve serving ads by knowing more about its users. This is done through every website, game and application, as well as Facebook's affiliates and advertising partners that

have integrated the social plugins. Information is communicated into Facebook and is **filtered** through its currencies and 'correct' behaviours, which receive a classification that is then scanned by the Facebook Immune System algorithm (more on this below).

Anne Helmond (2015) argues that 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. Data rhythms from Facebook outwards are more controlled and restricted. 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'. They observe that, '[w]hile the Open Graph presents an attempt to decentralise opportunities to connect external web content to Facebook, it at the same time recentralises these connections and the processing of user data' (Gerlitz and Helmond, 2013: 1355). The Like button, argue Gerlitz and Helmond, becomes an exchange currency that is supposed to reflect users' social behaviour, approach and emotions towards a form of content. But, another way of looking at this evolution is as a development of cookies, web-bugs and particularly advertising networks.

Eating the internet with the cookie like this

As discussed in the previous chapter, one of the main web economies has been facilitated by cookies, whereby publishers and advertising networks opened accelerated rhythm channels of communication with users' computers and created profiles based on their behaviours. Ad networks listen to users across several domains to personalise and target advertisements according to the profiles they produce and associate with specific audiences. In the previous chapter, publishers and website owners usually listened to

users through cookies on their sites (first-party cookies) or on a group of sites facilitated by an advertising network (third-party cookies), which was still relatively decentralised. Here, we see a re-centralisation of listening powers back to Facebook, which listens to users' behaviour across the web, wherever there are social plugins.

Web economies from the 1990s' and 2000s' digital advertising industry that flourished from **measuring** technologies and units such as cookies, pixels, clicks, impressions and hyperlinks were unified together in Facebook's territory and beyond. This can also be seen in the IAB's document 'Social Media Ad Metrics Definitions' (2009), in which they want to standardise 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). But, what can be seen is the **measurement** of many other actions that can now be listened to 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). Thus, it is not only the 'Like economy', as Helmond and Gerlitz argue (2013), but a mix of clicks and links, but, most importantly, cookies combined with pixels that allow multiple communication channels to function simultaneously. These mechanisms allow Facebook to listen to users' behaviour across the entire web. These channels are all linked to Facebook, which produces both the architecture and the subjects, and, therefore, makes its territory a central node that **filters** data inside and outside its territory.

While these websites and advertising services produce profiles of users by assigning what they consider to be anonymous IDs, Facebook already has profiles of users, forcing them to use their real names. By doing so, Facebook has developed cookies further and provided a face and a name to the ID numbers that cookies provided in the past. At the same time, this has helped Facebook to promote its service and standardise 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 conducts multi-layered communication channels. These channels enable listening and produce subjects that can then be fed back to these same people according the audiences' clusters. As indicated in the Data Use Policy, under cookies, pixels and other similar technologies:

> We use technologies like cookies, pixels, and local storage (like on your browser or device, which is similar to a cookie but holds more information) to provide and understand a range of products and services … We may ask advertisers or other partners to serve ads or services to computers, mobile phones or other devices, which may use a cookie, pixel or other similar technology placed by Facebook or the third party (although we would not share information that personally identifies you with an advertiser).

Therefore, what social plugins allow is an enhancement of Facebook's listening capabilities by knowing users' behaviour inside *and* outside Facebook's territory. With social plugins, Facebook can draw the Open Graph map of the web with more accurate user profiles because it can listen

to people's behaviour anywhere on the web. At the same time, the service also dictates and **filters** the way people's behaviour will be categorised in the normal curve it structures, according to what it considers to be 'social' and human. Instead of being an axis for advertising channels of communication, Facebook has transformed 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. Importantly, Facebook simultaneously runs multiple communication channels, which cater for different elements that are involved with this rhythmedia feedback loop, including: users, publishers, advertisers, advertising networks and affiliates.

Facebook enables these third-party companies limited and controlled listening capacities, which can also produce data subjects. This can be seen in the IAB's metric standardisation guide for social networks, in which it argues that, 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). But, advertising companies and publishers are restricted by Facebook in the kinds of listening they can deploy.

The section Facebook Ad Tracking Policy (see image below), 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. Facebook makes clear that, now, all of these must be authorised, **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 users' data behind Facebook's back.

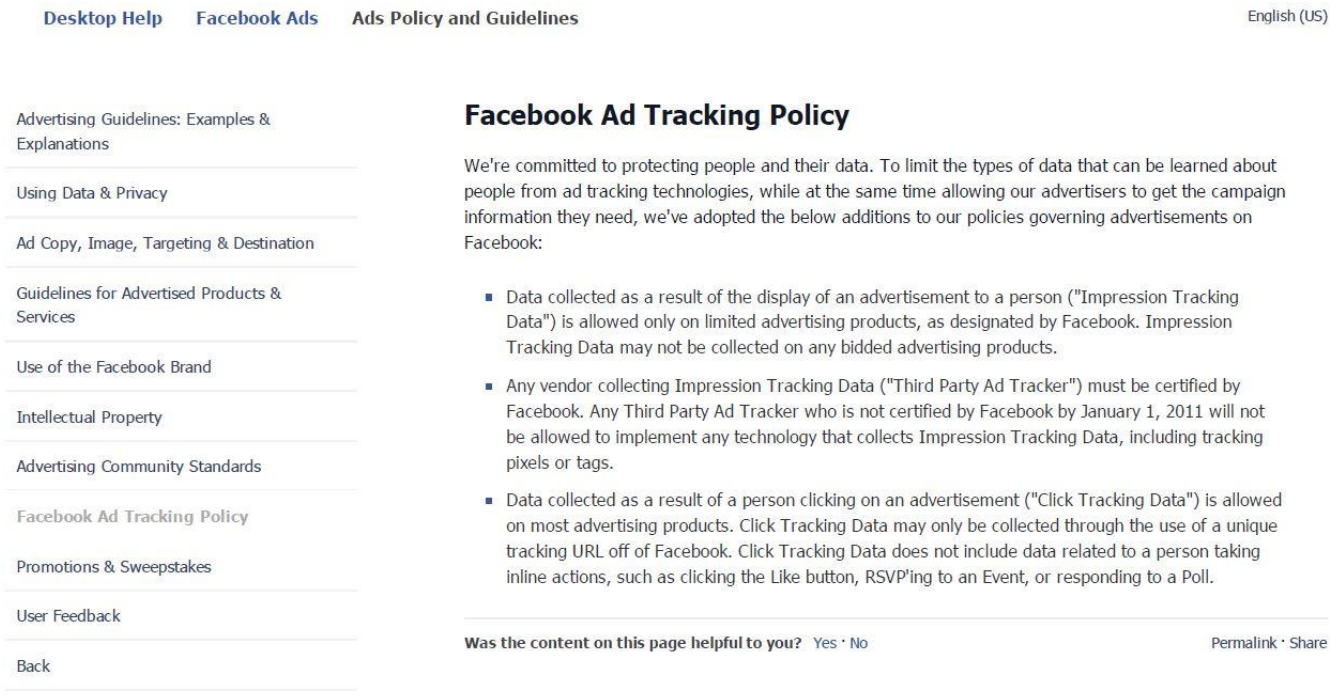

Figure 14: Facebook Ad Tracking Policy, (last time) captured on 2 November 2014.

Only Facebook's **measuring** tools and units are authorised to produce these data subjects, while all other players, from publishers, advertisers, apps, games etc., need to adopt and listen to these data subjects in the same standardised manner. This can be seen in Facebook's Advertising Guidelines, which state that, '[i]n 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.

While other advertisers were restricted by Facebook to produce subjects, the company does not restrict itself to creating profiles from people who have not subscribed to the service. 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.[90] According to van Dijck, Acohido 'found 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 on non-members is a bug. However, this 'bug' was revealed to be part of Facebook's business strategy on 26 May 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). 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.

According to Arnold Roosendaal (2011), Facebook sends a unique user ID cookie when a user first creates an account. According to Facebook's *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'. The user ID, then, is the data subject that

[90] A good example of this is Facebook's announcement on 21 June 2013 of the bug fix that jeopardised six million users, but on the way exposed the fact that the platform was building 'shadow profiles' through data collection from users uploading their contact lists or address books 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).

Facebook produces. According to Roosendaal, when users attempt to login to the service from a different device, Facebook sends a temporary (session) cookie, which 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.

Therefore, users' behaviour across the web, specifically where social plugins and pixels installed, is being listened to by Facebook and connected to their Facebook profiles, which have 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 monetised, either by selling them as objects or influencing their peers. According to Roosendaal, Facebook also sends cookies to non-members, which creates 'shadow profiles'; so, if and when this user creates a Facebook account, the history of their behaviour that has been documented 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.

Similar results surfaced in a study conducted by Belgian researchers Acar et al. (2015), who were commissioned to analyse Facebook's conduct by the Belgian Privacy Commission. According to Acar et al. (2015), Facebook's plugins can be considered as third-party cookies as they listen to users' behaviour when it is conducted outside of its territory on a separate website. What the researchers found was that Facebook sends cookies (called *fr*, *datr*, *lu* and *locale*) through its social plugins across the web. Specifically, they discovered that, first, Facebook tracks non-members of its service through a long-term identifier (the *datr* cookie) via its social plugins; second, Facebook tracks people who have never visited the service through social plugins on non-Facebook pages; third, Facebook tracks its users' behaviour inside *and* outside the service, whether or not they are logged in through its social plugins; fourth, Facebook tracks users who have de-activated their accounts; fifth, when users choose the opt-out mechanism offered by

Facebook, which requires them to visit digital advertising alliances in the US, Canada or the EU, it places a new cookie called *oo* (signifying opt-out initials, and which is non-identifying) facilitated by the social plugins, and specifically places a long-term cookie, the *datr*, on EU citizens' computers (Acar et al., 2015). The cookies are sent back to open a communication channel with Facebook, regardless of any interaction with the social plugins.

Facebook's Vice President of Policy in Europe, Richard Allan, responded to this in a blog post on 8 April 2015, arguing that, '[t]he report gets it wrong multiple times in asserting how Facebook uses information to provide our service to more than a billion people around the world' (Allen, 2015). When confronted with the results of trying to opt out through advertising alliances, Facebook argues that it 'no longer use[s] information about the websites and apps that person uses off Facebook to target ads to them'. It confesses to not using this information to tailor ads, which means that other uses of this data could have been made, mainly to produce subjects and optimise the architecture accordingly. But, it does not deny using cookies through its social plugins, which are placed after users have expressed their explicit choice to opt out.

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 – and the way Facebook uses them to reorder people's spatial and temporal configuration; in short, how Facebook conducts rhythmedia.

Ordering algorithms

Facebook operates several algorithms that have different purposes. According to 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, the bigger the database, the more relevant they can operate (whatever that may

mean to the company that uses them). Therefore, Facebook's social plugins are a way for the company to produce a richer database, beyond its platform, that its algorithms can use in their calculations. This is also why it is so crucial for Facebook to promote its standard units, because this means that the units of collection and categorisation are standardised. In this way, it is not only Facebook that uses this database, but also, in a more restricted way, other third parties. 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 that sense, algorithms are one of the tools media practitioners use to conduct rhythmedia, because algorithms are designed to reorder and shape people's temporal and spatial boundaries.

As Gillespie observes, algorithms produce knowledge, but represent a certain kind of knowledge logic (2014: 168), and the logic behind Facebook's algorithms is what 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). It is important to note, however, that these algorithms consist of several other algorithms. The way that these algorithms produce subjects and territories and the various procedures they conduct, in particular **filtering**, will be discussed now.

Paying to algorithmically sort time and space

Facebook's newsfeed algorithm is meant to present content according to a specific order that is calculated by various parameters. Facebook argues that the EdgeRank calculations operate according to three main parameters: affinity, weight and time decay. Mimicking the advertising network DoubleClick's motto, mentioned above, and more than a decade before, 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 optimise their time and reorder the time of the content. As it 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). Since the creation of content and engagement are important for the 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 ordered according to chronology, like many other SMP.

Facebook's newsfeed algorithm also produces a certain temporality. 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 design of this option is confusing because the user needs to press the 'sort' button and then see the two options revealed to make the choice. More effort and steps have to be taken to change to Most Recent because the default setting is always Top Stories. But, 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 its 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.

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 27 July 2014. It was also moved to the bottom of the section, now phrased as 'How do I see stories in my News Feed in the order they were posted', as opposed to being placed at the top (the first question

that appeared in the section) under the question ‘How do I adjust what I see in News Feed?’. It was not until May 2014 that Facebook included ‘Keep in mind that Top Stories is the default way to view stories in your Feed’. This is intended to appear as though people have choices, but the default design is pushed and enforced time and again.

What Facebook does here is reorganise users time and space within its territory, to present content that the company thinks might yield more engagement in a particular time. In other words, Facebook conducts rhythmedia in a way that will influence the user’s behaviour into more engagement and hence more knowledge production. Another way to reorder time to encourage people to engage more on the platform is conducted by resurfacing older posts on the newsfeed. This change to the newsfeed algorithm was announced on 6 August 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. 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 (Burk et al., 2011: 9).

While Facebook tries to present this conduct as ‘stimulating’, ‘highlighting’ and ‘re-engaging’, what is actually conducted is a calculated manipulation of time to increase engagement and hence more value and profit. In this way, although users are supposedly given the option on the ‘newsfeed sort’ to see

only the most recent and 'fresh' posts and photos, Facebook pushes its own preference of what might be more engaging through specific instructions to its algorithm. Here, it hopes that feelings such as nostalgia might 'stimulate' further actions. Importantly, Facebook constantly **restructures its territory**, features and algorithms to push users into more engagement on the platform as this gives it more data to listen to, enabling it to produce richer data subjects for monetisation.

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 users' future engagement. These predictions, similar to those of the advertising industry on the web since the late 1990s, can be made more accurately using richer databases. Listening deeper to users and produces more accurate predictions. Therefore, another important input that is 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 developed countries and whose connections are slow or less stable. As Chris Marra, Emerging Markets Product Manager, and Alex Sourov, Emerging Markets Engineering Manager, 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).[91] This is a way for Facebook to listen to 'lesser able' bodies and reproduce them as well, under different listening practices and rhythmedia. This is because, again, the bigger the database the more engagement it can yield and, hence, more value and profit.

But, there are other factors that instruct algorithms to calculate the inputs they use. These are advertisements that advertisers and brands pay and bid

[91] On 2 August 2017, Facebook included another time-based calculation to the newsfeed algorithm, which prioritises stories that link to webpages that load faster. As it argues, 'we've found that when people have to wait for a site to load for too long, they abandon what they were clicking on all together' (Wen and Guo, 2017). Afraid of users leaving their platform, Facebook introduced this instruction to the algorithm.

for to be ranked higher on users' newsfeeds. In an article that examined how ads are placed on Facebook's newsfeed, Facebook Product Management Director on the ads team, Fidji Simo, was interviewed to answer the question of what stands behind the decision making formula that makes the newsfeed algorithm:

> 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 to keep the balance between advertisements on the newsfeed and to ensure that users are not driven away, as most prefer to have no commercial content at all on their newsfeed (as will be shown below). But, 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 the *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 provides the following answer: '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 payment or bidding of advertisers, brands and other third-party companies to spatially and temporally reorder the newsfeed.

This question was changed on 2 June 2014, to 'How does News Feed decide which stories are top stories?', with the answer, '[t]he News Feed algorithm uses several factors to determine top stories, including the number of comments, who posted the story, and what kind of story it is (ex: photo, video, status update)'. The question changed once more in early August 2014 to 'How does News Feed decide which stories to show?', with the following answer: 'The stories that show in your News Feed are influenced by your connections and activity on Facebook. This helps you to see more

stories that interest you from friends you interact with the most. The number of comments and likes a post receives and what kind of story it is (ex: photo, video, status update) can also make it more likely to appear in your News Feed'. Once more, Facebook provides questions that indicate that its own interpretation of what users find interesting is what influences the algorithm.

Importantly, the question of how Facebook decides what to present changes from what is the most interesting to what appears at the top and then to stories to show. While the service answers that it is users' connections, activities, interests and the type of post that determine how content is shown on the newsfeed, it does not indicate that another factor – paying money and bidding – can influence what and when people see, and especially what they can see at the top of their newsfeed. Paying money to have a (better) ad placement and bidding for spaces and audiences are not practices that Facebook mentions in this section, although, as can be seen in other sections that are addressed to advertisers, they are a vital component of the newsfeed algorithms.

Regulating and standardising advertisers' behaviour

Paying to be spatially and temporally sorted 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 Veritasium[92] project on 10 February 2014. In the video, Derek Muller, the creator of this YouTube channel, shows how he tried to promote his Veritasium page in the authorised way, using Facebook's Promote Page (see Figure 15). Muller discovered that most of the Likes that came due to his purchase of Facebook's Promote Page service, approximately 80,000, came from Asia and that these 'paid users' clicked on a wide variety of brands and entities to

[92] Veritasium is an educational science YouTube channel, created by Derek Muller in 2011.

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 meant that the content would be less visible on users’ newsfeed. This would then affect users who had engaged, since the Veritasium Page would not appear on their newsfeed. Consequently, even the engaged users would not interact on his page since they would see it much less frequently or not at all.

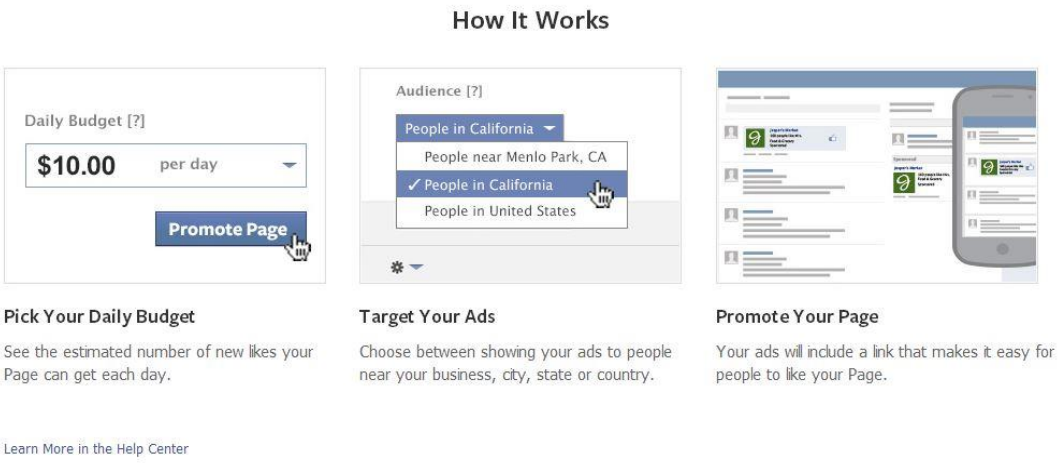

Figure 15: Get more likes service, captured on 11 November 2013.

The Promote Page service contrasts with the illegitimate practice of buying Likes, an illegitimate business model through which organisations and individuals can buy Likes through ‘click-farms’.[93] On 3 October 2014, Facebook’s Site Integrity Engineer Matt Jones provided tips for Pages to not buy fraudulent likes. As he argues:

> 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

[93] Click-farms hire low-paid workers from Asia to click on specific links/Pages/YouTube channels in order to increase the number of Likes/views and, therefore, show a fake popularity counter for a brand.

> number of likes are actually making it harder on themselves to reach people they care about most (Jones, 2014).

But, although Facebook argues that buying fake Likes will harm a Page's performance or business goals, it seems its own service acts in the exact same way. Similar to the spam and web cookies politics of categorisation illustrated in the previous chapter, the only difference between the Promote Page and click farm methods is who **licenses** them, the way that they are categorised and by whom. Facebook authorises its own practice of paid service to get more Likes, whereas organisations that are not Facebook but conduct the same practice are labelled illegitimate 'click-farms'. Facebook legitimises its practices and the power it has in making its own definitions in the same way as the IAB and other advertising associations. It can draw the line of legitimacy in its territory and standardise its market and trade practices, which benefits its business model. By doing so, it retains a monopoly over the production of territories and subjects and the way they are ordered, and it regulates the authorised rhythms in its territory. One of these regulation processes was to make a distinction between paid and unpaid 'reach', which it calls organic.

Constructing the boundary between organic and paid reach

The term 'organic' has become a catchphrase in US Silicon Valley terminology. This term is usually taken to mean the 'feed' of an SMP that is ordered 'naturally' according to users' engagement on it. But, as this thesis has shown, there is nothing natural about the production of knowledge through media. The way that media practitioners have been conducting processed listening and rhythmedia has been precisely targeting this notion of feeling natural rather than technologically mediated. Strategies of making ordering feel 'organic' can be seen in Chapter 4, in Bell's attempt to present its decibel as an objective representation of the ordering of sounds in New York City. The training programmes of the telephone operators were also meant to provide a frictionless service, turning them into efficient

communication channels operating fast as machines, decreasing noise or delays. In Chapter 5, the organic 'ordering' was conducted by advertisers and publishers who traded people in the automated online market, and hid the multi-layered communication channels facilitated by cookies from users through the default browser design. 'Organic', in this context, ordered the type, timing and placing of content on websites. In short, there is nothing organic about rhythmedia.

For Facebook, this distinction is used to provide a paid service from the sorting newsfeed algorithm. The intention is to make advertisers and brands think that when they do not paid, the ordering is happening 'naturally'. According to Facebook, there is a difference between organic 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'. In a way, 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 seen above, Facebook constantly changes both its architecture and algorithms to influence users' behaviour for more engagement.

This attempt to construct the newsfeed algorithm as organic is a strategic move to show that there is little intervention in its design, even though there is, constantly. As Brian Boland, who leads the Ads Product Marketing team at Facebook, advises businesses on how to use Facebook to increase their organic reach:

> Like TV, search, newspapers, radio and virtually every other marketing platform, Facebook is far more effective when businesses use paid media to help meet their goals. Your business won't always appear on the first page of a search result unless you're paying to be part of that space. Similarly, paid media on Facebook allows businesses to reach broader audiences more predictably, and with much greater accuracy than organic content (Boland, 2014).

Boland argues that Facebook operates like other media, but these base their content on editorial decisions and business calculations in the way they present content and (usually) have a clear distinction between content and advertisements. Here, Facebook offers ‘faster lanes’ to reach the top of users’ newsfeeds, just as other internet companies such as search engines and ISPs.

Tech Crunch’s Josh Constine argues that a decrease in the organic reach of Facebook Pages should be taken into account in a much larger and more complex ecosystem in which both Pages and users compete for attention. He observes that, ‘every additional post you see from one Page is one less you see from a friend or other Page you care about … Over time, people add more friends and Like more Pages, yet they can’t keep increasing the amount of time they read News Feed’ (Constine, 2014). However, Constine also argues that the service has been deceitful in encouraging companies to buy likes as a ‘long-term’ investment when it already knew that such a decrease in reach was expected due to newsfeed changes.

Shedding light on paid versus organic reach can be seen in Facebook’s announcement on 11 February 2015, when it launched the feature called ‘relevance scores’ to ads on Facebook. This feature calculates a score between 1 and 10, which Facebook bases on the positive and negative feedback it foresees an ad as receiving from a target audience. This new 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). Again, previous metrics standards of the advertising industry are used by Facebook here.

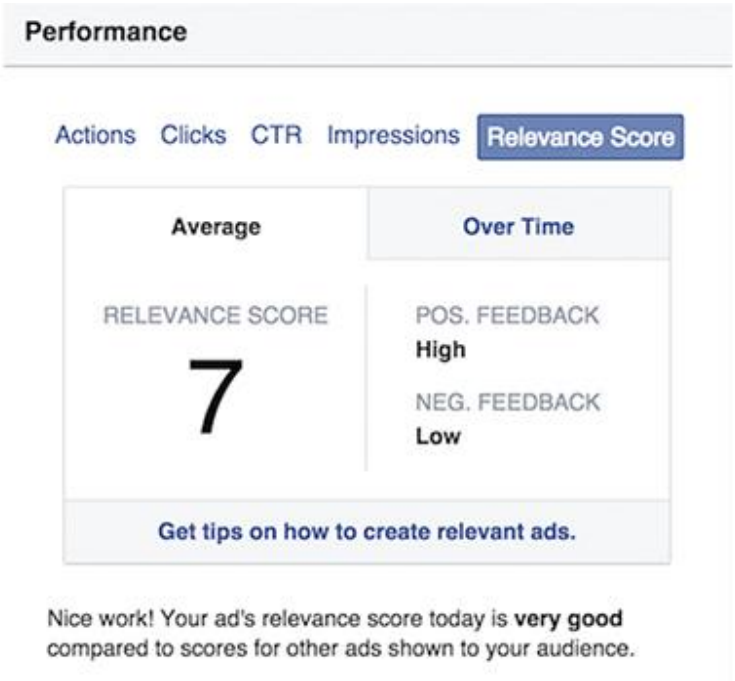

Figure 16: Relevance Score (Facebook, 2015).

According to Facebook, 'positive' interactions are dependent on the ad's objective, but generally relate to views (impressions), clicks or conversions,[94] whereas 'negative' interactions relate to users hiding the ad or reporting it. However, this feature comes with a reservation. Facebook makes clear that, although the use of this relevant score might reduce advertisers' costs, they still need to bid high in order 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).

[94] 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 behaviour of the user due to the ad.

As Facebook makes clear, here, the higher the bid, the higher a business's chance of success, or, in the territory's terms, prioritised position on the newsfeed. Bidding on Facebook, as it explains in its 'Bids' section, is combined with other factors in the 'ad auction'. Although it claims that it tries to balance the auction between creating value for advertisers and providing 'positive' and 'relevant' experiences for its users, it is not quite clear how Facebook actually does that. The factors Facebook argues it considers in an auction are: 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 works. It also shows how Facebook continues and develops another digital advertising industry market tool – real-time bidding – and turns it into its own. 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.

It also shows that one of the main purposes of bidding is to push users into action. Following Foucault, we can see here how algorithms are used to enact power over users' actions. As Facebook argues, it 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'. This is precisely why it is important to create a knowledge database of users' behaviours, because this is what determines users' 'estimated action rates'. We can also see how Facebook, just like the digital advertising industry, constructs specific time-based **measuring** rules that indicate a user's frequent action in relation to another person or object. Such frequency-based rules, then, can help to produce predictions that can be packaged into products. Users' behaviours and temporal considerations turn into products. But, Facebook knows that users do not want to see ads on their newsfeed. On 14 November 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.

In this announcement, Facebook promised 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 bid for 'paid' reach to be ordered on users' newsfeeds. This seems problematic for several reasons. First, if users find a Page annoying because of the overly promotional posts then they can un-Like a Page or hide it; although, as mentioned above, requests are not necessarily respected. Second, one of the 'traits' of these overly promotional posts is 'Posts that reuse the exact same content from ads'. Brands that aim to emphasise 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, which creates a burden on the system. Here, Facebook trains brands and advertisers not to share excessively, just as it does with its users (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.

Moreover, Facebook changes the control opportunity to see less ads, without informing its subscribers. This shows that, as in the previous chapter, internet users are expected to be informed on the way behavioural advertising is performed; Facebook provides itself with a **license** to regulate behaviours within its territory by drafting or developing new features and expecting users to be informed and act accordingly. The service could inform users in the notification section, as it does with other features such as people's birthdays or events, but it does not. What it does offer is the opportunity to see ads that are less relevant, which means it will not use the information it has from cookies, pixels and other tools that track users' behaviour in other places on the web to make more personalised advertisements. However, it will still use

this data to change different features and (re)produce the subject. Such gathering of data is important to establish the characteristics of the healthy body, which is exactly what the Facebook Immune System algorithm is about.

The Facebook Immune System algorithm

On 10 November 2011, Facebook revealed its National Cybersecurity Awareness Month Recap and the Facebook Immune System (FIS) algorithm. During October, Facebook celebrated cyber security by organising several events, and also announced 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).

A few months earlier, on April 2011, Facebook researchers published an article elaborating on FIS (Stein et al., 2011). According to Stein et al. (2011), FIS is an algorithm based on machine learning that scans all the behaviours performed by users on Facebook to classify them according to specific categories and then detect anomalies. The researchers stated that, as of March 2011, they were conducting '25B checks per day, reaching 650K per second at peak' (Stein et al., 2011: 1). This means that users' behaviours are being listened to and statistically measured, examined and categorised in 'real time' to create a normal curve of the healthy but also human body. Some of the 'spammy' behaviours' characteristics have the same pattern and frequency, which means that their rhythm is identical and thus easier to spot as irregular. In this way, when an irregularity of behaviour occurs, Facebook can infer that this is an unwanted 'spammy' behaviour, according to its own

definition of what is wanted, and respond accordingly. According to Stein et al.:

> 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', who are the users. This is interesting since, as discussed above, Facebook changed my newsfeed preferences against my wishes, meaning that I did not (and still do not) want my newsfeed sorted according to Top Stories but rather according to Most Recent. If Facebook did have the same interests as me – to make my Facebook experience of the newsfeed as 'positive' as possible and according to my wishes – then it would respect my wishes. But it did not, at least 71 times, and those were just the times that I counted this change for the purposes of this research. Importantly, as shown above, Facebook pushes its own ordering of ads according to whoever bids higher. Facebook also tries to influence people's behaviours by using architecture design or friends' behaviours. Therefore, there are other elements that come into this machine learning computational calculation, which are not mentioned.

The FIS algorithm relies on several components: Classifiers, which consist of several machine learning algorithms that categorise actions; Feature Extraction Language (FXL), which is a dynamically executed language based on statistics for expressing features and rules – this gives classifiers a memory of past actions so they know how to operate in a dynamic way; dynamic model loading; the Policy Engine, which organises users' actions into classifications and features according to a specific business model; and Feature Loops (Floops), a translation mechanism between the information produced by the classifications into features, also incorporating user

feedback and data from crawlers and from data warehouses. Here, we can see various dynamic systems aiming to listen to the rhythms of users' behaviour to detect irregularities.

Facebook researchers emphasise the importance of fast updates for new models and policies, which provide the advantage of this algorithm, because, as they argue, '[a]ttackers change behavior a lot faster than people change their buying patterns' (Stein et al., 2011: 3). For example, they provide a timeline of a phishing attack to show how time and frequency play important roles in detecting 'attackers' and abnormal behaviour. Rhythms and time are extremely important, then, for ensuring Facebook and its Open Graph remain 'safe'; but also, as seen in the section above, they help in producing a knowledge database of users' behaviour that can be monetised. Accuracy is key here, as users' 'estimated action rates' are an important metric in auction bidding.

Furthermore, Facebook's researchers argue that the design of the architecture promotes certain kinds of behaviour, mainly interactions that happen in 'real time', simultaneously and instantly. Therefore, the FIS algorithm must operate in this way to accommodate this need: 'On Facebook, users communicate in a pattern more similar to online chat than email. This is facilitated and encouraged by the user interface design … Interaction on the site biases towards realtime, meaning classification must be realtime to be effective' (Stein et al., 2011: 5). Here, Facebook's researchers confirm again that the architecture design is intended to influence a certain kind of behaviour and that the algorithms operate accordingly. But, the notion of 'real time' is misleading here because there is nothing 'real' or 'organic' about the time and rhythm that Facebook orchestrates – it is in a constant process of (re)production. The full operation of the FIS algorithm can be seen in the image below.

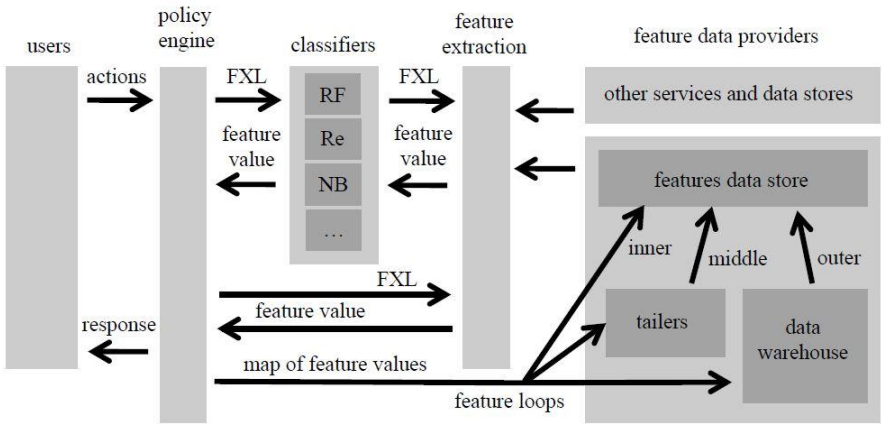

Figure 3. High-level design of the Immune System.
This diagram outlines how a user action flows through the system. Various classification algorithms are shown with the labels RF (Random Forests), NB (Naive Bayes), and Re (Regression). Time starts at the top. A user action flows in with some basic feature values. The policy layer runs all relevant policies on the action. Policy evaluation triggers data fetching. Requests are batched for efficiency. Caching is done with memoization at the language evaluation layer. There is little locality between actions. Once all the features have been collected, the system evaluates the policy and maps it to a response. This completes the user action. Following that, realtime counters are updated and the feature map is written to a log. This log flows into tailers and the data warehouse. These feature loops provide classification history and sharing. The longer feature loops have access to progressively more data, but at increasing latency. Inner (counters) has latency of 10-15ms, middle (tailers) has latency of 5-10s, and outer (warehouse) has latency of 1 day.

Figure 17: Facebook Immune System algorithm operation design (Stein et al., 2011: 6).

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). Users' feedback can be 'both explicit and implicit. Explicit feedback includes marking as spam or reporting a user. Implicit feedback includes deleting a post or rejecting a friend request. Both implicit and explicit feedback are valuable and central to defence. In addition to user feedback, the system has knowledge of aggregate patterns and what is normal and unusual' (Stein et al., 2011: 2). Here, we can see how Facebook treats any kind of action on its platform as valuable data. This is done within Facebook's territory *and* outside of it ('global knowledge') thanks to its social plugins that listen, **measure**, collect and categorise users' behaviour across the web and then create a database to conduct rhythmedia according to its business model and advertiser bidding.

The dataset is never finished and is constantly changing, which means that Facebook can adjust its strategies and algorithm according to users' behaviour by tweaking different features that suit its business model. Facebook relies on its subscribers' feedback (loop) to maintain the service's

equilibrium. Therefore, training its users 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 behaviour, which is unwanted behaviour in a specific territory, 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).

However, Facebook has its own definition of unwanted behaviour within its territory, and this is how such behaviours are categorised, not according to users' understanding. The researchers identify three main causes that can jeopardise the Open Graph: compromised accounts,[95] fake accounts and creepers.[96] I will focus on the latter two, as they show Facebook's approach to securing its territory and **training the bodies** of its users to become well-behaved **filters**. The most interesting threat that can harm the Open Graph is *creepers*. This category of user 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' users. 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). They elaborate and say that, '[u]ser education can help reform creepers bothering people that are not their friends, but ideally conflicts between friends can be solved directly between the two friends' (Ibid).

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[95] 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).

[96] 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.

Thus, training users towards Facebook's desired behaviour is paramount for the frictionless functioning of the service. By acting in this undesired 'spammy' way, these users disrupt Facebook's production of data subjects and their relations to actual friends, which are facilitated in several of its advertising practices such as Sponsored Stories. If users 'Friend' strangers, then sponsored stories recommendations would be insignificant since they are not their real friends and therefore would not manage to persuade these strangers to engage. The multiple ways in which Facebook produces data subjects by **training their bodies** will be explored now.

Working to become data subjects

This section looks at how Facebook constructs the correct form of behaviour in its territory, while controlling, prohibiting and engineering what cannot be done within its territories. I argue that Facebook produces users into multiple subjects, including the communication channel, as well as the producers (sender), consumers (receiver), and the message. One of the main subjects users are produced is as the **filter**, which helps to maintain the equilibrium of Facebook as a medium. Each of these subjects requires **training of the body** to understand the desired way to behave. This activity is usually a practice that can produce monetisation for Facebook. One element of training is the architecture (how things connect and how movement is directed and manipulated) design (the expressions and relations options) provided by SMP (as discussed above), which guides users on how to present themselves and interact with others. Another element of the training programme is filters, allowing users to indicate in various ways what interests them and what does not. Users do this in four ways, which will be elaborated below: Liking, reporting, conducting surveys and listening.

Liking to quantify and order knowledge

The Like button was introduced on 9 February 2009, in a post in which 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). This means that the Like becomes a sorting numerical unit that can be monetised and exchanged. It also means that Liking is a form of **filtering** that helps Facebook to understand what users find more interesting than other content across its territory.

Thus, users 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 user has dedicated time to click on a particular piece 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 users 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. This also helps Facebook's newsfeed algorithm to show users things so they will not become bored with the service and decide to spend less time on the platform or leave altogether.

The Like button enables a quantified, standardised, comparable exchange unit/currency, whereby an aspect, or several, of the human expressions and interactions can be **measured**, analysed and become a product. Clicks, as seen in the previous chapter, were one of the first metrics in the web economy, which advertisers have been using since the late 1990s. But, what Facebook tries to do is to have its own measuring unit as the dominant and standard one, and, at the same time, change its purpose. This was done by Bell, as seen on Chapter 4, as it competed with other sound measuring units such as the 'sone'. In Chapter 5, advertising companies also debated the

meaning and method of measuring clicks and came to an agreement through the IAB standardisation project. Facebook aims to disrupt this and push its own definition of measuring and producing subjects. This means that all objects, people, their behaviours and interactions could be measured and be represented by the Like button. The Like button represents *only* wanted forms of behaviour – only what can be monetised.

Regulating excessive behaviours

As seen in the previous chapter, spam's most common description is a form of excess, a burden on the system, and this notion can be seen on 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 amounts of Likes an account can make to make spamming in the form of Liking many times an inefficient operation. When an account Likes many times, in an unusually high frequency, the service makes sure the account is legitimate. This is because 'businesses 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 behaviours, as seen with the FIS algorithm, becomes an indicator of authenticity – high volumes of actions lead to users being seen as not real, robots or hired clickers (as in the click-farms, mentioned above).

Sharing on Facebook also has its limitations. In the *Graphic Content* community standard, Facebook warns its users to use its most advocated action – Sharing – 'in a responsible manner'. In the *Data Policy* section, under the sub-section *Sharing and finding you on Facebook*, 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'. This means that Facebook not only promotes self-censorship regarding the kind of

content users should share, but also choose carefully the kind of audience suited for the content. Since Facebook's default is always set to public, users must 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, on 10 April 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 behaviour: Like-baiting, frequently circulated content and spammy links. In the second type of spammy behaviour, Facebook wants to control users 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). One explanation of this policy might be that Facebook seeks to give privileged status to its Promoted Page feature, for which Pages need to pay a certain amount in order to become more visible on the newsfeed. But, it also comes as a warning to users who re-share content and by doing so create a burden on the newsfeed algorithm.

Frequently circulated content is Sharing, which is the main activity that Facebook encourages, prioritises and monetises; but, this activity should be regulated according to what can yield the most value. Repetitive content creates surplus on Facebook's newsfeed as it does not add new interactions and might confuse the algorithm by feeding it with 'double' data relations. In addition, controlling repetitious shares is another way for Facebook to regulate its internal market according to its own rhythmedia. It does so by prioritising Pages that pay and bid to be ordered at the top of users' newsfeeds and thus give preference to Facebook's advertising practices rather than practices conducted by Pages that do not pay. Users and Pages are thus policed, disciplined and managed to behave in rhythms that Facebook considers legitimate.

Another example of restricting and controlling behaviours 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 user or just see fewer posts from that friend. On 31 July 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 users use the options offered by Facebook's architecture according to their needs, the service 'nudges' them towards its own interpretation of how to use them. Such 'nudge' mechanisms are not notified to users in an explicit way, as can be seen by the statement above, but rather in either ignoring their selected preferences (of hiding content) or adjusting architectural options. In this way, Facebook is conducting rhythmedia, altering users' 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 control and produce behaviours accordingly.

The excess of Likes, Hides or Shares can have negative influence on the accuracy of Facebook's newsfeed algorithm. This is because it statistically calculates such actions to establish the users' newsfeed orderings. Thus, in order 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 rhythm manifestations of actions. This can be done

by Facebook categorising this problematic activity as noise, or, in this case, spam. Further, as Bell developed *A Design for Living* programme to educate the telephone operators, so does Facebook try to educate users and its algorithms by **training their bodies** for the desired behaviour in its territory. Thus, 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 in a specific direction by the use of statistics.

Surveys

Another way for users to provide information that can help **filter** content and behaviours on Facebook is surveys. Facebook sends its users surveys in two main ways: one, positioning surveys on the bottom right-hand side of the platform (see Figure 18), and two, occasionally, Facebook circulates surveys to users, which appear on the whole screen once they enter the territory, to better understand its newsfeed. Contrary to the surveys conducted in NYC, here, the results of the ways that the data are processed and used are concealed from the users. It is difficult to know exactly how the data derived from the surveys informs Facebook's changes. I received the second type of survey three times during the data collection period: on 30 October 2013, 2 July 2014 and 13 July 2014. The first survey from 2013 (see Figure 19) provided ten different kinds of post and the user had to rate whether they wanted to see more of these posts on Facebook using a five-star scale.

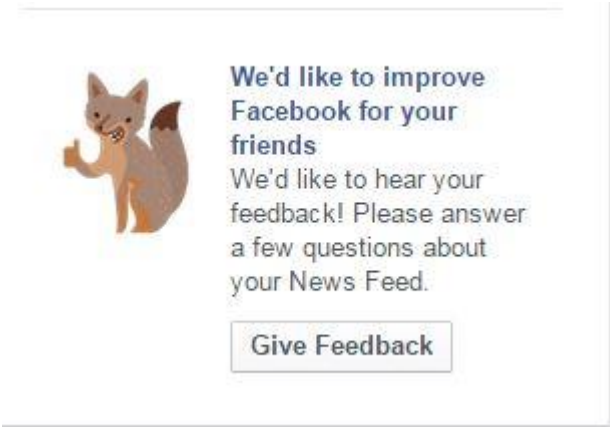


Figure 18: Facebook encouraging its users to provide feedback, captured on 23 September 2015.

Figure 19: Facebook survey, captured on 30 October 2013.

The other two surveys were delivered during July 2014, after the exposure of Facebook emotion experiment. The 13 July 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 2 July 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 15 July 2013.

On 4 December 2015, Sami Tas, Facebook's Software Engineer, 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 see as biased ordering, there is a need to take special measures when it comes to such unusual rhythmic behaviours. 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 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, and whether they are treated as legitimate or illegitimate.

Listening: The voiceless actions that count

Behaviours on Facebook do not have to make a sound. Taina Bucher (2012a) observes that the newsfeed algorithm has three main criteria for sorting objects, using EdgeRank: affinity, weight and time decay. Affinity, she argues, means the kind of relationship the user who views an object has with the user who created the object; weight relates to the popularity or importance Facebook ascribes to this object; time decay describes how recent or 'fresh' an Edge is. Edge, according to Bucher (2012a), is 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 users according to their interactions and

the value assigned to each of them. What gives value to objects, users and Facebook, more broadly, is the way users interact within the service, which capitalises on sociality.

But, precisely because an Edge is *any* interaction, then **filtering** and ordering users or objects is also determined by actions and relationships that are not visible. For example, if I visit one of my friend's profiles, EdgeRank will 'understand' that I am interested in this friend and show me more posts on the newsfeed from her. This is elaborated in the section *Information we use and how we use it*, in the sub-section called *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'. When people perform actions, Facebook views this as the user communicating with it, and any kind of interaction on Facebook is also considered as sharing information (including users' devices, their internet connection, location etc.), even when it is not visible to other users, and this then informs the newsfeed algorithm's filtering mechanism.

Facebook's researchers have been interested in understanding users' listening practices in quantitative ways to encourage them to share 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 users perceive their invisible audiences since this knowledge can help 'science' and 'design' to influence content production and self-expression on Facebook's territory. As they observe:

> 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).

Here, we can see that the reproduction of territory and data subjects must be balanced; the strategies Facebook wants to deploy on users must be subtle enough not to scare them away and yet still influence them and their peers to share more content. The researchers undertook this research to understand whether design changes that provide quantitative metrics to show the user 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. All actions count, whether they are silent or make a sound. It is the actions that make noise that need to be controlled, managed and, hopefully, eliminated or, at least, not be measured. But, it is Facebook that decides what noise is, and this keeps changing according to its business model, the advertisers who bid, its subjects and the territory.

Using Facebook's data logs, the researchers (Bernstein et al., 2013) compared surveys that asked users how many people they think see their posts. Their methods revealed that, similar to web browsers, Facebook also has server logs that document every kind of behaviour within its territory. With this tool, 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 and use them. 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, we see that the accuracy depends on the media practitioner's expertise to operate the listening tools and infer data from them.

Bucher (2012a) argues that a factor that drives users' behaviour on Facebook is the threat of invisibility and of not being considered important enough. But, people are also encouraged to provide information about what they find interesting in actions that are not visible. For example, on the right-hand side, in the 'Chat' option, Facebook shows when users' friends were

last online, thereby increasing the ability to 'lurk' on friends' behaviour practices within the territory. In fact, inasmuch as Facebook rewards users in making them or their interactions more visible, the service also promotes interactions that can broadly be called 'listening'.

Such listening practices are not visible to other users, but they are heard by Facebook, which archives these Edges as valuable data in its data logs. Facebook could easily have implemented the possibility to show users who has looked at their profile, as it has done with its private messaging feature. This latter option shows when the person you sent the message to has viewed it, by marking the bottom of the messaging space with one tick, including the date and time it was read. By doing so, Facebook can **filter** people and objects according to actions that users do not want to make visible to others.

Since listening involves participation, this affordance serves to make users feel more empowered as they, too, have the capability to know people and things. What these features also do is normalise a certain kind of listening, that which is associated with lurking. But, not all invisible actions are encouraged; for example, in cases in which Facebook users start to write something, but then change their minds and do not Share. Such an interest in invisible forms of behaviours of its users (and trying to control them) can be seen in a study conducted by Facebook's researchers (Das and Kramer, 2013), who examined the issue of what they term 'last-minute self-censorship' on Facebook. According to the researchers, contrary to real-life censoring mechanisms, SMP allow users to type and review their thoughts before they share them, providing an additional **filtering** feature that is not available in real-life communication. The reason why such actions are interesting to Facebook is:

> Last-minute self-censorship is of particular interest to SNSs as this filtering can be both helpful and hurtful. Users and their audience could fail to achieve potential *social value* from not sharing certain content, and the SNS loses *value* from the lack of content generation (Das and Kramer, 2013: 1, emphasis in original).

As Das and Kramer (2013) argue here, content generation is among the main actions that create value to SMP; therefore, if users are reluctant to do that by self-censoring themselves, potential profit is lost. Therefore, 'improving' means 'minimising' self-censorship by changing such unwanted forms of user behaviour. Facebook can **restructure its territory** or tools to encourage users to share more information in a controlled way, because, as mentioned above, over-sharing is also problematic. One of Das and Kramer's (2013) hypotheses was that they expected users who use the audience selection tool more frequently to censor themselves less, and their analysis proved this assumption to be incorrect; users who are more aware of the audience selector tool actually censor more. Importantly, Das and Kramer argue that one of their 'motivations in understanding the phenomenon of self-censorship in social media is to understand when it is *adaptive*' (2013: 7–8, my emphasis). Their research shows that listening interactions *are* important for Facebook as important input, and the way that some behaviours should be changed and managed. It also shows that Facebook manages a particular rhythmedia, whereby it aims to amplify certain actions over others, but these can be both silent and vocal because everything counts in large amounts.

Reporting

Another key way to turn users into **filters** is by reporting. Different SMPs have different mechanisms of reporting, which are also called 'flagging'. This mechanism allows users to inform the service that a particular piece of content is unwanted for various reasons, such a being hateful or abusive, violent, sexual, harmful, infringing copyright and so on. 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, SMPs control public discourse, including how and what should be debated and what should be heard in their territories. This is also illustrated, they observe, in the limited form of communication such 'flags' allow. This can be seen in the very limited means that Facebook provides for users to report content, while providing only categories that it can benefit from itself, by adjusting its algorithm and architecture in a way that will allow an efficient rhythmedia for both users and its affiliates. 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 users are expected to be the quality assurance (QA) for the whole system, and keeping their own accounts safe. In *How to Report Things*, users are given illustrations and step-by-step guidance on reporting abusive and spammy content in the following objects: Timeline,[97] ads, events, groups, messages, Pages, photos, videos, posts, posts on a user's Timelines, questions and something the user cannot see. In another section dedicated to safety information and resources, users are advised to '[l]earn how to recognize inappropriate content and behaviour and how to report it'. Here, as in the previous chapter regarding educating EU citizens about safer internet, users are expected to learn to be responsible and to educate others; they are trained to keep Facebook's safety.

Facebook encourages people to categorise/report (flag) forms of content that they do not want to see or that they feel is spammy by providing three options: It's just a spammy photo/post, the user's account has been hacked

[97] Timeline was launched on 22 September 2011 (Tow, 2011).

or this is a fake account. After the user has categorised what type of spam this is, Facebook offers options to either *unfollow* or *block* the spammy user. Later on, Facebook also provides users the option to *see less* posts from a particular person, *see first*, which means that specific Pages will be prioritised in the sorting of users' newsfeeds, and mark specific people as *favourite friends*. Importantly, Facebook does not allow reporting on its advertising practices, such as Sponsored Stories and the advertisements that appear on the right-hand side, as spammy content. In this way, Facebook trains **users' bodies** on what they have the power to report – their peers' content – and what they cannot – Facebook's content. They can report ads, but this does not mean that ads will disappear altogether.

Facebook also encourages users to report things that are not listed in its terms or community standards through the social reporting feature, which was introduced on 10 March 2013. Social reporting means that, if a user does not like something that is posted on their newsfeed, they can ask that friend to remove it. By doing so, users are regulating, controlling and managing *each other* in a biopolitical way and thus helping Facebook to define and enforce 'good' behaviour. This is a way to educate and socialise users 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 users want and to have another **filtering** mechanism for the kinds of things it should not order in the newsfeed, thus helping to tune the algorithms. As with many other SMPs, after users report to Facebook, they do not know what happens with the report, or how many other people have also reported the same thing. On 26 April 2012, Facebook launched its Support Dashboard feature, which allows users 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 a piece of content. Such information can persuade users to complaining 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 unionise by **de-politicising** them, here, Facebook uses similar strategies.

In the spam section (under the security section), users are encouraged to report spam: 'By doing so, you will be playing an important role in helping us protect other people from scams'. But, users 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 made sure with various diet and exercise regimes for its operators, is crucial for subjects who function as communication channels and **filters**. While users are encouraged to report, what happens to the reports is taken care of by Facebook's hidden processors: CCM and FQP.

The hidden human processors

Facebook employs different kinds of workers to help maintain its multiple communication channels. Workers include newsfeed ranking engineers, data scientists, software engineers, product managers, researchers, security officers and many others. Along with employees whose workplaces are in Facebook's offices, there are others who are less known. These workers reside in other places and, sometimes, are not officially declared as Facebook workers: first, Facebook's cheap, outsourced labour, known as content moderators; and second, Facebook's raters, known as the Feed Quality Panel. Their work is crucial to **filtering** unwanted behaviours from Facebook, but they are kept hidden for several reasons: to naturalise their work as part of the 'organic' algorithmic processes, 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.

Commercial content moderators (CCM)

Beyond users who are encouraged to report violations, there are specific people who are hired to clean the 'filth' from the streets of Facebook, and they are called 'content moderators'. According to Nick Summers (2009), this 'internal police force' was sitting in Facebook offices in the US, and, in 2009, consisted of approximately 150 people. 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' (2009). On 19 June 2012, Facebook revealed information on its *Security Page* regarding the processes that happen in the 'back end' after users report (see Figure 20). According to the post, 'to effectively review reports, User Operations (UO) is separated into four specific teams that review certain report types – the Safety team, the Hate and Harassment team, the Access team, and the Abusive Content team. When a person reports a piece of content, depending on the reason for their report, it will go to one of these teams'. These positions were not found in the Help section when I searched for them.

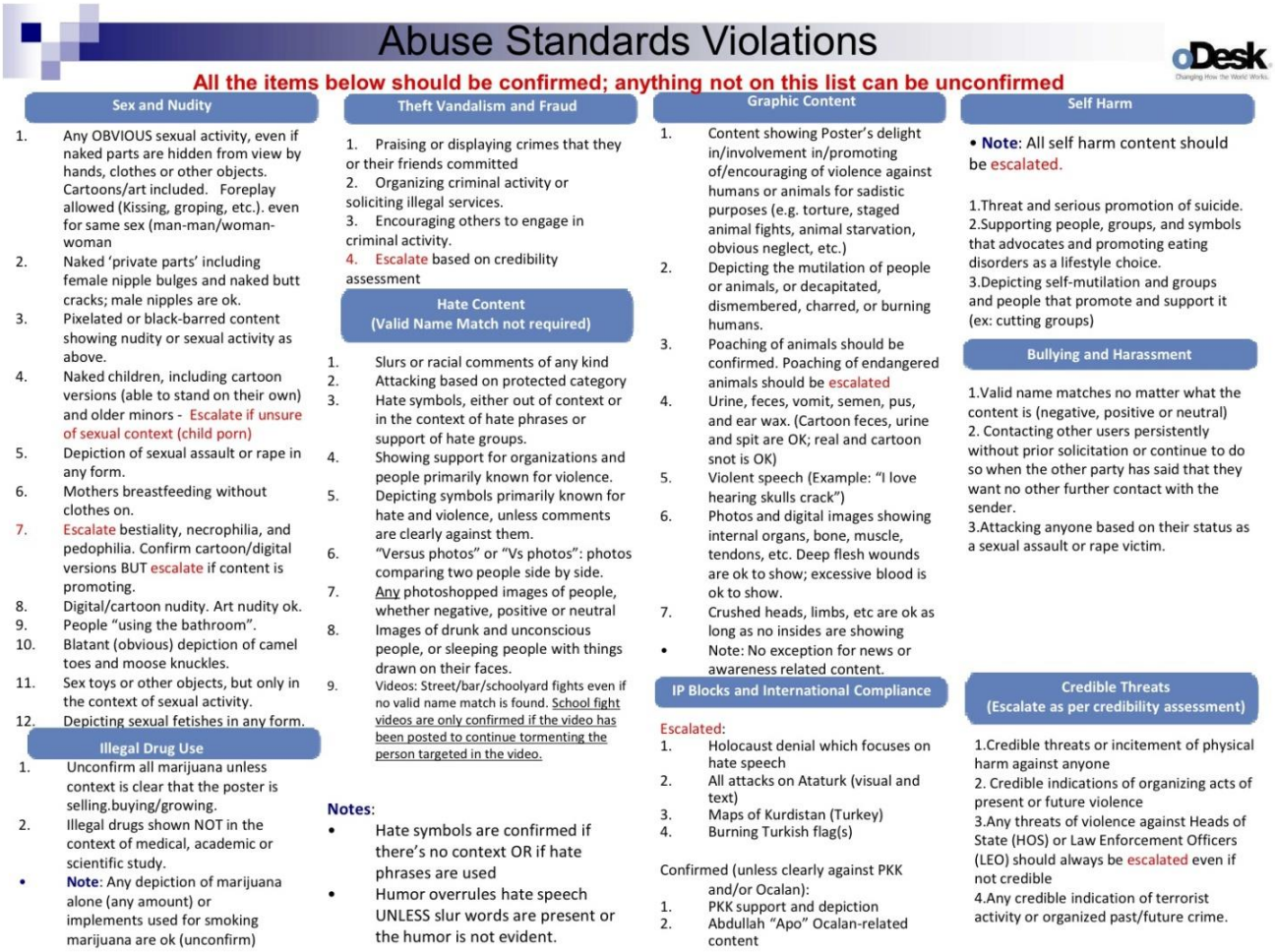
Figure 20: What Happens After You Click 'Report' (Facebook, 2012).

According to Adrian Chen (2014), content moderators are usually hired in the Philippines as the country's relationship with the US allows workers to understand the social standards; but, importantly, they are cheap labour:

> 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).

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 users as offensive. The list of problematic content categories (see Figure 21), as mentioned in the article, is a mirror of the community standards: 'pornography, gore, minors, sexual solicitation, sexual body parts/images,

racism'. These types of content are sent to the moderating team after being flagged by users, and can go through three filtering processes: one, content can be 'confirmed' as offensive, thus erasing it from both the user'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 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.



Abuse Standards Violations

oDesk

All the items below should be confirmed; anything not on this list can be unconfirmed

Sex and Nudity

1. Any OBVIOUS sexual activity, even if naked parts are hidden from view by hands, clothes or other objects. Cartoons/art included. Foreplay allowed (Kissing, groping, etc.). even for same sex (man-man/woman-woman
2. Naked 'private parts' including female nipple bulges and naked butt cracks; male nipples are ok.
3. Pixelated or black-barred content showing nudity or sexual activity as above.
4. Naked children, including cartoon versions (able to stand on their own) and older minors - Escalate if unsure of sexual context (child porn)
5. Depiction of sexual assault or rape in any form.
6. Mothers breastfeeding without clothes on.
7. Escalate bestiality, necrophilia, and pedophilia. Confirm cartoon/digital versions BUT escalate if content is promoting.
8. Digital/cartoon nudity. Art nudity ok.
9. People "using the bathroom".
10. Blatant (obvious) depiction of camel toes and moose knuckles.
11. Sex toys or other objects, but only in the context of sexual activity.
12. Depicting sexual fetishes in any form.

Illegal Drug Use

1. Unconfirm all marijuana unless context is clear that the poster is selling.buying/growing.
2. Illegal drugs shown NOT in the context of medical, academic or scientific study.

- **Note**: Any depiction of marijuana alone (any amount) or implements used for smoking marijuana are ok (unconfirm)

Theft Vandalism and Fraud

1. Praising or displaying crimes that they or their friends committed
2. Organizing criminal activity or soliciting illegal services.
3. Encouraging others to engage in criminal activity.
4. Escalate based on credibility assessment

Hate Content (Valid Name Match not required)

1. Slurs or racial comments of any kind
2. Attacking based on protected category
3. Hate symbols, either out of context or in the context of hate phrases or support of hate groups.
4. Showing support for organizations and people primarily known for violence.
5. Depicting symbols primarily known for hate and violence, unless comments are clearly against them.
6. "Versus photos" or "Vs photos": photos comparing two people side by side.
7. Any photoshopped images of people, whether negative, positive or neutral
8. Images of drunk and unconscious people, or sleeping people with things drawn on their faces.
9. Videos: Street/bar/schoolyard fights even if no valid name match is found. School fight videos are only confirmed if the video has been posted to continue tormenting the person targeted in the video.

Notes:

- Hate symbols are confirmed if there's no context OR if hate phrases are used
- Humor overrules hate speech UNLESS slur words are present or the humor is not evident.

Graphic Content

1. Content showing Poster's delight in/involvement in/promoting of/encouraging of violence against humans or animals for sadistic purposes (e.g. torture, staged animal fights, animal starvation, obvious neglect, etc.)
2. Depicting the mutilation of people or animals, or decapitated, dismembered, charred, or burning humans.
3. Poaching of animals should be confirmed. Poaching of endangered animals should be escalated
4. Urine, feces, vomit, semen, pus, and ear wax. (Cartoon feces, urine and spit are OK; real and cartoon snot is OK)
5. Violent speech (Example: "I love hearing skulls crack")
6. Photos and digital images showing internal organs, bone, muscle, tendons, etc. Deep flesh wounds are ok to show; excessive blood is ok to show.
7. Crushed heads, limbs, etc are ok as long as no insides are showing

- Note: No exception for news or awareness related content.

IP Blocks and International Compliance

Escalated:

1. Holocaust denial which focuses on hate speech
2. All attacks on Ataturk (visual and text)
3. Maps of Kurdistan (Turkey)
4. Burning Turkish flag(s)

Confirmed (unless clearly against PKK and/or Ocalan):

1. PKK support and depiction
2. Abdullah "Apo" Ocalan-related content

Self Harm

- **Note**: All self harm content should be escalated.

1.Threat and serious promotion of suicide.
2.Supporting people, groups, and symbols that advocates and promoting eating disorders as a lifestyle choice.
3.Depicting self-mutilation and groups and people that promote and support it (ex: cutting groups)

Bullying and Harassment

1.Valid name matches no matter what the content is (negative, positive or neutral)
2. Contacting other users persistently without prior solicitation or continue to do so when the other party has said that they want no other further contact with the sender.
3.Attacking anyone based on their status as a sexual assault or rape victim.

Credible Threats (Escalate as per credibility assessment)

1.Credible threats or incitement of physical harm against anyone
2. Credible indications of organizing acts of present or future violence
3.Any threats of violence against Heads of State (HOS) or Law Enforcement Officers (LEO) should always be escalated even if not credible
4.Any credible indication of terrorist activity or organized past/future crime.

Figure 21: Abuse Standards Violations on Facebook (Chen, 2012).

Chen (2012) provides the guide that content moderators receive: 'Abuse Standards 6.1: Operation manual for live content moderation', which is usually kept confidential. Facebook's first Abuse Standards document was drafted in 2009. Version 6.1 consists of a 17-page manual, and workers are given instructions on how to respond to users' reports, and other kinds of content. For example, when it comes to hate speech, Facebook provides different classifications for different users: ordinary person, public figure, Law Enforcement Officer (LEO), and Head of State (HOS). Each of these categories of user has different considerations when it comes to hate speech towards them. The types of attack can be: empty threats, credible threats, referenced negativity, cyberbullying, attacked with hate symbols, and attacks based on their being a sexual assault victim. Interestingly, the most protected users are HOSs and public figures, and then LEOs and ordinary users. When it comes to assessing the credibility of threats, Facebook provides a flowchart accompanied by a 'credibility test', which consists of three parameters: *consequences*, which is proposed violence targeted at HOSs or LEOs, terrorism or organised crime; *specificity*, relating to the content specifying time/place, method or target; and *practicability*, which relates to whether or not it is possible for the individuals proposing the violence to carry it out.

Thus, Facebook hires human processors and provides them with guidelines that provide a structured workflow, similar to the way in which algorithms are given instructions. Content moderators, like the telephone operators, are meant to decide, distinguish and **filter** the signal and noise within seconds to maintain the equilibrium of the medium. Both are supposed to have memory and adjust their behaviours 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 rhythmedia of these media territories will feel 'organic' and not interfered with. They are also cheap labour 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.

This is interesting in light of Facebook Principles, a section that no longer appears, and specifically its ninth principle, which stated that there should be a 'transparent process', meaning that, as the principle outlines: 'Facebook should publicly make available information about its purpose, plans, policies, and operations. Facebook should have a process of notice and comment to provide transparency and encourage input on amendments to these Principles or to the Rights and Responsibilities'. As can be seen here, Facebook keeps many of its **filtering** subjects and the decision-making rationale behind this non-transparent. As Catherine Bunni and Soraya Chmaly argue in their account of the history of content moderators:

> The moderators of these platforms — perched uneasily at the intersection of corporate profits, social responsibility, and human rights — have a powerful impact on free speech, government dissent, the shaping of social norms, user safety, and the meaning of privacy. What flagged content should be removed? Who decides what stays and why? What constitutes newsworthiness? Threat? Harm? When should law enforcement be involved? While public debates rage about government censorship and free speech on college campuses, customer content management constitutes the quiet transnational transfer of freespeech decisions to the private, corporately managed corners of the internet where people weigh competing values in hidden and proprietary ways (Bunni and Chmaly, 2016).

This matters because, if content is removed because sexist or racist groups have asked for it to be removed, for example, then this jeopardises users' ability to express themselves and also to protest against such measures, as in the case of the Free the Nipple campaign or Black Lives Matter. This means that the kinds of content or people who are removed can shape the behaviours of the people who use this media, and this can have political and social implications on a macro level.

Feed Quality Panel (FQP)

Alongside paid content moderators, Facebook also hires people to fill out surveys to gain a better understanding of what users categorise as interesting in their newsfeeds and the reasons behind this. As mentioned above, Facebook frequently sends its unpaid workers – its users – surveys regarding newsfeed functionality. But, perhaps because users are neither rewarded for filling out these surveys nor receive information about the results and what is done with them afterwards, the incentives are quite low. On 18 August 2014, Facebook began a special project in Knoxville involving 30 paid workers in their 20s and 30s 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), in a post titled *Using Qualitative Feedback to Show Relevant Stories*, published on 1 February 2016, in which the service said that:

> 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).

'Improving' concerns for who and for what purpose, because, as shown above, despite people's clear actions against various algorithmic or

architecture design, Facebook pushes its own rhythmedia rationale. The work of the FQP is very similar to the work users 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 that have 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.

According to Oremus (2016), this project was led by Adam Mosseri, Facebook's VP of newsfeed, who argues that the FQP are also asked what they would prefer to see instead of the post shown to them. Importantly, Oremus argues that Mosseri and his team realised how valuable and important the qualitative input that they receive from the human feedback filters, and, therefore, expanded the project nationwide and overseas. Human filters, as Facebook's newsfeed managers realise, are paramount to the functioning of Facebook. Algorithms have limited abilities to decipher what is important and especially what influences users to behave one way or another.

Levy (2015) reveals some of the findings that Facebook concluded from the FQP. For example, Facebook discovered that the Like button has different meanings to different users, in different contexts. But, a more interesting revelation was that users 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.[98] 'In general,

[98] Max Eulenstein is a newsfeed product manager.

> 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 in their newsfeed; however, since users wishes clash with its business model, the one that sells the service to advertisers, then users' opinions about ads matter only in the sense of producing advertising content in a less annoying way. Facebook will train its users through various algorithmic and architecture design to change their behaviours with advertisements. This could be a possible reason for the results of such surveys not being published or open to the public. These surveys, then, try to have a better understanding of the kinds of story users 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. Facebook tries to understand what users classify as spam and avoid creating advertisements that might be seen as spam by changing its strategy and displaying something else, but which is, in essence, the same – advertisements.

Conclusion

This chapter examined the ways the media practitioners at Facebook produce its territory and subjects, while structuring the power relation to position itself at the top as the exclusive **expert**. 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 users. 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 and algorithms, and two human, which are its paid workers and,

most importantly, its users. All of the elements inform each other in a recursive feedback loop in which rhythmedia is conducted by Facebook and vibrates 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 the behaviours of its users to yield more engagement and thus more value to the service. With the audience selector, the company tries to encourage users 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 users' friends to engage with brands. They do that by producing users into communication channels and monetising their relations with their friends. Producing users as communication channels is conducted by disguising ads to look like 'organic' posts and not placing them on the right-hand side of the platform, which is the designated place for advertisements. Such architecture designs are intended to influence users 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 advertisings' cookies, along with pixels, which listen to users' behaviour 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 behaviours. Here, we can see how Facebook develops the ad network technology and turns the platform into a place where users can perform their everyday lives and, at the same time, stretches its tentacles through cookies and pixels across the whole internet. But, whereas in Chapter 5 these channels were relatively decentralised 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 as it does, but forbids companies from producing data subjects from the platform's data. Facebook's affiliates must use the company's own measuring tools and units; the data subjects that Facebook produces must be used and not replicated by others or reproduced using other metrics. Facebook also provides itself with a license to act in ways that, when conducted by others, are deemed illegitimate. For example, Promote Page is a service that produces fake Likes by using click-farms, which Facebook is authorised to deploy but others outside of the platform cannot. In this way, Facebook operates as an advertising association, whereby it dictates how ads should look, be measured and even what kind of text and images they should have. By doing so, Facebook standardises its measuring tools and units and, importantly, 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.

The second non-human filter is Facebook's algorithms. One of Facebook's key algorithms is EdgeRank, which temporality and spatiality orders the newsfeed. Facebook creates a boundary between 'organic' and paid reach to encourage companies to pay and bid higher to be better ordered. The organic way that EdgeRank functions is influenced by people's relations, and that also means actions that are made in silence such as listening to people's profiles. The paid method that EdgeRank operates prioritises posts and brands that bid the highest for a particular target audience. But, as content moderators show, there is nothing 'organic' about the way Facebook's algorithms order its territory – rhythmedia is never neutral.

Behaviour is extremely important to the production of data subjects, because this enables Facebook to predict what the 'estimated action rates' are, which is an important factor in its ad auction bidding. Listening to behaviours is also important in statistically analysing the normal behaviours of people, which can help in identifying when there is an abnormal behaviour. This is similar to Foucault's argument about the way statistics are harnessed for knowing a

population and managing the deviant phenomena. This is done with Facebook's FIS algorithm, which categorises behaviours to create a normal curve that can assist the service in detecting abnormal behaviour. This curve is constantly changing according to Facebook's business model and what kinds of behaviours it perceives as being able to harm its value. Facebook categorises as spam activities that can risk users' profiles by distorting **measurement**, exchange and trade.

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 categorised as spam because they can create multiple/inauthentic profiles of users or undisciplined subjects who can distort the accurate knowledge production, which can harm Facebook's business model. The main characteristics of such 'spammy' behaviours' are having the same behavioural 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 standardisation on the web, the boundary between the healthy and human body and the problematic and robotic one is constructed. But, such definitions are constantly changing and the 'right' rhythmedia is always in process.

The human **filters** of Facebook are also employed by the company but operate as silent processors. This is done so that users will think that this is the organic way the algorithms operate. In this way, Facebook avoids being accountable for the decision-making processes these workers make. The first type of workers are content moderators, who remove content that has been reported by users 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 behaviour as similar to algorithms as possible. Their rhythm, like that of the telephone operators, must be fast and efficient, machine-like.

The other workers are known as the FQP, and they are meant to provide more meaningful input about their engagement on the platform. By doing so, they help Facebook expand its listening and learn how to modify different

design and algorithmic features to push as many advertisements as possible without irritating users. Since such workers and users clearly indicate that they do not like promotional material in their newsfeeds, Facebook tries to see how far it can stretch the line while still retaining users on the platform for as long as possible. 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 Facebook's users, 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 idea of the correct behaviour and to use the tools Facebook provides for their intended use. For example, although Liking and Sharing are promoted forms of behaviour, they need to be used in a controlled rhythm, to not confuse the algorithms, and hence the knowledge production/database. Excessive behaviours can also be illegitimate ways to promote products without paying Facebook. Users 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. Users are one of the most important elements as they help to inform the newsfeed algorithm as to what is interesting to them by Liking, conducting surveys and reporting what is not interesting to them. However, it is important to note that, although users' 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, 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.

Chapter 7 – Conclusion: Listening to the deviant rhythms in media

This thesis aimed to challenge what has become the common understanding of spam – that it is not interesting and should be filed in a particular folder to be forgotten forever. But, as I have shown, spam is much more than Nigerian princes or Monty Python's (excellent) sketch. As I have shown in this thesis, investigating 'deviant' media categories can tell us a lot about media. As Foucault argues regarding how to examine power relations, 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' (1982: 780). This thesis shows the ways media practitioners construct specific behaviours as deviant in different periods and territories and what that means with regard to media and communications. Unlike many scholars from the history of science and media and communication this thesis used sound concepts to theorise and conceptualise power relations in media rather than vision, (in)visibility and seeing. Two main theoretical and analytical tools guided this thesis: processed listening and rhythmedia. These sound concepts, I argued, are more suitable when examining media knowledge production and power relations, because of their abilities to cross boundaries (of bodies and spaces).

Because 'deviant' media receives different categories and configurations in different periods and media, I aimed to outline broad strategies that show how power was constructed by using them. These broader strategies help to show longer lineages of 'new' media phenomena, which apply to analogue and digital media. These strategies were developed based on the grounded theory approach; that is, I conceived them from the process of data collection and analysis. This thesis's main argument is that media practitioners in different periods have been using processed listening and rhythmedia as part of seven sonic epistemological strategies to (re)produce subjects and territories (see Appendix 1). The first three strategies are associated with processed listening: **new experts**, **licensing**, and **measurement**; the next

four strategies are related to rhythmedia: **training of the body**, **restructuring territories**, **filtering**, and **de-politicising**. Through the three case studies, I illustrated 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 demonstrated how such power came into action by restructuring territories and training people to become subjects.

Although Foucault never talked about media or lived to see 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 directed this thesis. Focusing on the new political power of states, Foucault's theory of governmentality, and, in particular, how it intermingles sovereignty, discipline and biopolitics, has reoccurred in the case studies in this thesis in different capacities. As the empirical chapters in this thesis chronologically progressed, the power of states was gradually delegated to commercial actors and especially media practitioners to produce knowledge about populations. This is not to say that states have stopped producing knowledge or lack power, but rather that the power media companies have been holding can be stronger and have more capacities. The evolution of discipline and biopower, as demonstrated in the empirical chapters, is characterised by the scope, the spaces where the knowledge production is conducted.

This thesis showed how power has been enacted by actions deployed on actions in media, whether through modifying architectures to influence people's behaviours, or through actions on people's behaviours or their friends' behaviours, in the present with an ambition to influence their future actions. In each of these case studies, I showed how power relations have been constructed in a process that was co-produced by human and non-humans and conducted by a rhythmedia, repetitive training of individual bodies and populations as a whole. This rhythm is far from being neutral, and to understand the way it is conducted to conduct other people's conduct has been the main goal of this thesis. The repetitive conduct of conduct, I showed, is what made spam become spam, and emphasised how important it is to study such deviant media.

This dissertation has developed and used concepts from sound studies to research how media power is reconfigured in different times and territories. Using sound studies has been productive, especially in relation to multi-layered communication channel territories such as the web and Facebook. As shown in Chapters 5 and 6, in only two decades, the number of communication channels that have been developed and are operating simultaneously has increased immensely. This means that there are multiple spaces operating simultaneously, in different rhythms. Vision, (in)visibility and seeing are concepts that cannot explain the ways that media practitioners can conduct processed listening by tuning into and out of various spaces according to their position in the power relation.

Following Supper and Bijsterveld's (2015) work on sonic skills, I developed another mode of listening – processed listening – which better suits the power relation processes that occur with and through media. Specifically, processed listening is how media practitioners enact their power by defining noise/spam. This mode of listening is the way media practitioners (Such as Bell or Facebook or several actors, such as the advertising industry) listen to different sources (people's biological and digital bodies, objects, material or mediated territories), by using several tools (manual or automatic), in different temporalities, to produce knowledge for economic purposes. The listening 'event' is continuous and conducted in several spaces, tuning in and out of individual bodies and people as a population. Processed listening comes together with another concept I developed, called rhythmedia. This concept describes the ways media practitioners use the knowledge produced by processed listening to (re)order people (bodies and behaviours) and the relations between them through media territories (analogue or digital). Rhythmedia is about the ways media practitioners conduct spatial and temporal reconfigurations that involve repetition and are influenced by their business models.

Although it seems that processed listening is the first step that then informs the way the rhythmedia is conducted to (re)produce subjects into subjects, this is an ongoing recursive feedback loop. Both processed listening and rhythmedia 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. The way these seven strategies were deployed in the empirical chapters through processed listening and rhythmedia will be discussed in the following section.

Creating the knowledge database with processed listening

Processed listening involves measuring, categorising, recording and archiving to produce a knowledge database. Each of these actions already produces, shapes and excludes certain types of subject. Processed listening involves the strategies of **new experts**, **licensing** and **measurement** to create a knowledge database that can then be used for rhythmedia. In Chapter 4, I showed how, in 1929, Bell listened to people and spaces across NYC using the tools it developed – the audiometer and the noise meter – and with its measuring unit – decibel. **Licensed** by the power given to it from the Noise Abatement Commission, Bell became the **new experts**. The company's media practitioners were able to establish and decide what the thresholds were for what constitutes the normal, healthy *and* human by defining anything that was interfering 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 categorise behaviours and spaces that interfered with their business or values as noisy.

The knowledge database Bell produced enabled it to reconfigure specific groups of people and behaviours, so that the city 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 standardised the way people thought and understood sociality according to Bell's measuring unit. This reoccurred in Chapter 6 with Facebook and its standardised unit, the Like. The production of knowledge in these cases, then, was not only with

the matter of the measuring tools, units and the drawing of noise maps; it also reproduced people as subjects who experienced their lives according to Bell and Facebook's standards.

A second strategy deployed by Bell 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 citizens of the city so they could be trained to identify noisy behaviours. People in NYC did not have Bell's measuring devices so they could not accurately measure and provide exact units. But, here, this did not matter so much as to train them to be aware that they should care about noise and to define their relations according to the decibel. This way, 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 or informing the authorities about them. Ultimately, both the NAC and Facebook have used only survey findings that suit their rationales, while ignoring others.

When it came to its employees, and especially its operators, Bell expanded its listening capacities immensely. As Chapter 4 showed, Bell listened to its operators inside *and* outside their work hours and also inside *and* outside their workspaces. Here, Bell stretched its listening capacities to be able to collect as much information as possible about the operators' lives. With the *Design for Living* programme, the boundaries of operators' bodies, time and minds were re-drawn by Bell, using media, and moulded like objects. By organising 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. It did this to gain more knowledge about their behaviours, desires and thoughts so they could be trained as more efficient and obedient communication channels and **filters**.

These two events in Chapter 4, I argue, provided inspiration for Claude Shannon's information theory and cybernetics' conceptualisation 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 categorise noisy behaviours 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 behaviours while applying storage and 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 delegated to automatic communication channels operated by several technologies such as codes, algorithms and protocols.

The more knowledge media practitioners had, the more they could turn it into various types of product and service. These procedures were delegated, partly, to automatic machines, which accelerated the listening process and thus the ability to produce subjects and territories.

The early establishment of regimes of noise/control 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 5. Around the 2000s, the number of media practitioners that deployed processed listening increased and decentralised the power relation to involve more actors. Here, we see 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, SSP and DSP.

These media practitioners were **licensed** by the European Commission's soft law approach to be the **new experts** that could listen to people on the internet. These multiple practitioners conducted an automated online market that facilitated multi-layered communication channels. Their main argument was that, since the business model of the web transitioned from subscription to free access to spaces and content, digital advertising had become the main sponsor. Other actors such as web browsers and publishers were also **licensed** to listen and provide the territories and **measuring** tools to conduct most of these practices.

To know people on the web, the digital advertising industry standardised web metrics, including listening tools such as first- and third-party cookies, pixels and log files and units such clicks, unique visitors and page impressions. The advertising industry's various practitioners 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, behaviours and habits. But, to have an efficient feedback, there was a need for a rich dataset that enabled data to be divided into people's preferences, behaviours and characteristics, and then reassembling and customising them into multiple possible subjects. People's behavioral traits were divided into groups according to gender, age, location, preferences (for example, sporty, electronic music fan), 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 and produced as specific subjects according to pre-defined profiles. 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' (1991: 100). In this way, the digital advertising industry produced individual ways of living.

As I showed in Chapter 5, listening to people as a population also helped the advertising industry to statistically map behaviour online and then draw the boundary of which behaviour should be categorised as human and robotic. In this way, they decided how and which bodies counted. The more knowledge they had on people's behaviour, the more they were able to categorise behaviours that did not suit their business model as robotic or spammy. In this way, 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.

People's digital bodies and minds were exposed to processed listening practices by multiple media practitioners, who restructured the boundaries of

their bodies. People's private lives, behavior, minds, desires and feelings became public to whoever was **licensed** to deploy listening capabilities. The main sonic device used for that was cookies, which were plugged into people's bodies and communicated their behaviours through their browsers that functioned as their bodies and measuring tools. The log files were archiving all of their actions, creating a database that was used to produce different types of subject according to audience segmentation. Most people did not have access to listen to their own bodies. The listening process was continuous and more and more data was collected, **filtered** and archived whenever people used their browsers.

Cookies were an efficient communication technology to extract users' behaviour without them knowing, funding free services by turning them into the product. In Chapter 6, we saw how Facebook has developed cookies and other **measuring** tools and metrics from the digital advertising industry, but mainly how it has developed cookies into social plugins. By persuading publishers, apps, games and other platforms to install its social plugins such as the Like and Share, Facebook listens to people's bodies inside *and* outside its platform and collects the maximum amount of data about them. Similar to the strategy of Bell with the decibel, this shows how important it is to persuade other companies to promote a media company's metrics and, by doing so, exploit their value to increase yours, and, importantly, make it the standard.

Facebook enacts it power by having the most listening capacities, re-centralising social plugins (cookies) multi-layered communication channels back to itself. At the same time, Facebook delegates some controlled listening capabilities to its affiliates and even lesser listening capacities to the platform's members. Facebook turns this data into its own measuring units and, by doing so, standardises the kind of data subjects that can be (re)produced. Unlike the digital advertising industry's claims that it does not know who people are but rather do this listening anonymously (which was debunked in Chapter 5), here, Facebook already manages people's profiles using their real names.

The listening ‘event’ never finishes because Facebook needs to keep selling users as products in its online market. This is why, as I showed in Chapter 6, 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 user a potential subscriber, soon to join. While Facebook listens to people’s individual bodies with its social plugins plugged into people’s digital bodies, it also listens to them as a population using its FIS algorithm. This is done to identify individual and mass patterns of behaviours, which are knowledge the company can use to (re)design its architecture in a particular way, to yield more value. Specifically, it can **measure** and establish which behaviours harm and damage its economic model and categorise them as spam. For example, ‘click-farms’ are illegitimate because they offer the same service as Facebook’s paid service Promote Page. Just like Bell, in Chapter 4, and the digital advertising industry, in Chapter 5, listening to behaviours and statistically mapping populations enables rival services and harmful behaviours to be categorised as noise or spam.

All the empirical chapters show that processed listening was conducted to produce a knowledge database. This is created by measuring, categorising, recording and archiving behaviours. This is an ongoing process because, to use the database for monetisation, 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 categorise and count, what is archived in the database and who can access and use that data. When the media practitioners discussed in the three empirical chapters gain knowledge about people and territories, they are able to temporally and spatially reorder them in a rhythmedia that benefits their business. In the next section, I will discuss the key findings in relation to rhythmedia in the empirical chapters, along with the sonic epistemological strategies deployed to conduct it.

Deviant order: How rhythmedia temporality and spatiality shapes media

This section focuses on rhythmedia, the second and yet simultaneous part of media practitioners' knowledge production. Rhythmedia has been reiterated in all three time periods and media, and it serves several purposes: one, **restructuring the territory** in a way that promotes a rhythm that increases value for media practitioners; 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 from being held by un-crowding, **de-politicising** them; five, increasing 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.

Chapter 4 discussed how rhythmedia was conducted by filtering street commerce and African-American's behaviours to have a different street rhythm, one that promoted big retail shopping centres. In New York City, African-American's behaviours were also listened to and defined as noisy by Bell and the NAC. African-Americans in Harlem challenged both the spatial and temporal ordering of the white locals. 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 that had been drawn by Bell and the NAC. Their noise was portrayed as though it harmed others' bodies and made them sick, thus forcing African-Americans to change their behavior and the way they constructed their subjectivity. Their behavior was constructed as noise, a threat to other bodies and minds, to the healthy rhythm of people in the city. Categorising 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 done 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. 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 operate the feedback loop. 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. But, 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. The knowledge it gained on the operators, then, was collected and archived to restructure them into more efficient and obedient objects.

Listening to the operators, foreign street commerce traders and African-Americans in Harlem was conducted both on individual bodies, but also, more broadly, on groups of people such as peddlers, ash can workers, and, importantly, unions. These populations' behaviours interfered with the economic endeavours 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 and, hopefully, eliminated. With both NYC and the operators, another goal was to circumvent gatherings of unions that could lead to political action, and the aim was to un-crowd them. In this way, bodies and territories were reconfigured towards a rhythm that would benefit these media practitioners and their economic endeavours, and silence disturbing rhythms.

Chapter 5 discussed the knowledge base created by 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 this new online market in which individuals, audiences (population segments) and spaces within publishers' territories are traded within milliseconds to the advertisers who offer the most money. With rhythmedia, every rhythm has a cost. Commercial rhythms are constructed and become the main engine that (re)produces new notions of time,

subjectivities and territories. Here, we see how real-time transactions are conducted by algorithms and automated systems, but managed and given instructions by humans. Because humans are the product, similar behaviours conducted by non-humans do not count in the digital advertising industry's measurements, because they do not yield value.

Because this automated market demands accuracy and consistency, as I showed in Chapter 5, it was crucial to illegalise specific unsolicited bulk communications and categorise them as spam. Despite spam and cookies having a similar communication rhythm, cookies were authorised by default (design) while spam was **filtered** out. The digital advertising industry did not want excessive behaviours, human or robotic, to interfere with the **measurement** of behaviours and, thus, efficient operation of the automated market they facilitated.

However, a clear definition of spam could not be found because the way power was put into action here was guided by the European Commission's soft law approach, which meant that, instead of clear rules, there were recommendations, agreements and best practice documents. Such flexibility and ambiguity are characteristic of the transition from discipline (as we saw in Chapter 4), into biopolitics (as seen in Chapter 5, and even more clearly in Chapter 6). Deviant behaviours in media are fluid because they receive their categorisation according to threats and dangers they might cause to the business models of commercial companies. Therefore, the media practitioners must continue their processed listening as widely and deeply as possible to have a rich database that statistically maps behaviours across the territory. Such a dynamic database allows them, as the cybernetics approach argues, to adjust future conduct by past performance and also adjust their territories accordingly. In this way, I showed how *not* having distinct and clear definitions is powerful.

But, when it came to the legitimate rhythms, there was a need for clearer legislation and standards. To authorise cookies, the advertising industry lobbied EU legislators and the IETF so that they would be considered legitimate communications. Browsers helped in this standardisation process by ignoring the IETF recommendations (which were later softened) and not

giving users listening capacities to inspect their own bodies, also termed ‘back-end’. Here, again, the ‘back’ and ‘front’ ends of browsers default settings drew boundaries of who could listen to what; users could not listen to what was being done to their bodies, while their bodies were a public listening space.

In this way, people did not know that cookie communication was plugged into their digital bodies, but they were also unaware of the online automated market that was trading them to the highest bidder. The ‘back’ and ‘front’ ends also drew boundaries between the human and robotic behaviours that were conducted in different temporalities. The ‘back end’ operated at fast-paced rhythms so they could **restructure the territories** people experienced in the ‘front end’ and, consequently, produce their ways of living. This made people feel that the way they experienced the web was ‘organic’, rather than based on orderings conducted by bidding auctions between different media practitioners in the digital advertising industry. Users paid for this engineered ‘free’ experience of accessing websites with their behavior, usually without their knowledge or consent. They became the message, the product and the consumer.

As the ad network DoubleClick’s famous slogan said, this RTB market enables advertisers to ‘deliver the right message to the right person at the right time’; matching content in specific spaces on websites, to specific people according to their previous behaviours in specific times during their web experience. Here cybernetics key principles return. The inputs, data about people’s behaviours, were communicated by cookies, making cookies a key listening device to create a huge database from which to facilitate this recursive feedback loop process. As the online ad display market was facilitated by automatic multi-layered communication channels, this happened within milliseconds, (re)producing the territory people lived in and, by doing so, (re)producing specific consumer subjects.

People, then, were the start and end points of this feedback loop, which operated in a continuous process of knowledge and, consequently, subject production. The knowledge database the advertising industry collected based on people (according to profiles and segments of populations) also related to

the way the architecture (in terms of advertisements, content, settings) was reordered according to their actions in specific times. In this way, there were constant feedback loops, whereby people's behavior was listened to, turned into data (commodity) that was traded, then specific content and architecture was (re)structured and fed back to them to influence their behavior and thus produce them into specific subjects.

Some actions, such as making purchases, would be kept private by momentarily encrypting the listening process, thanks to the Secure Sockets Layer (SSL) browser standard. This signalled to users that only when they bought something online would the territory be ordered in such a way that their bodies would not be listened to. In both of these cases, the architecture trained people to become consumer subjects that should buy products. It also taught people that, if they did not grant access to their bodies, there would be no access to live in those territories. The options of living, as Foucault argues in terms of biopolitics, are arranged as if people have the freedom to choose, but, in fact, these options have already been controlled and limited towards economically driven behaviours and care of the self.

As I showed in Chapter 6, having more knowledge can help in restructuring the way Facebook's newsfeed algorithm EdgeRank orders the platform. One of these ways is to reorder temporalities by making the default setting Top Stories, ordering people's experience within the territory according to popularity (as defined and instructed by Facebook), rather than chronological (Most Recent). The service ignores the way users want and actively choose to live in that territory, by changing their preferences from Most Recent to Top Stories. This became clear when Facebook changed my newsfeed, sorting preferences dozens of times against my wishes. Facebook also reshuffles temporalities to increase value by resurfacing older objects that may invigorate nostalgia and thus more engagement. Such orderings are meant to persuade users to share more information on their private lives and spend more time within the territory. It aims to manipulate feelings by shaping different temporalities, and this was seen in a larger scope with its 'emotional contagion' experiment in 2014. Having more knowledge about users' relations with other people, brands, content and objects, whether these

relations are silent or not, is used to influence their behaviours and feelings towards creating more value.

Another way Facebook conducts rhythmedia is by making a distinction between ‘organic’ and ‘paid’ reach. The newsfeed algorithm is influenced by the ad auction the company conducts in which advertisers and brands bid to be ordered higher in the newsfeed. One of the key factors that influences the bidding is users’ ‘estimated action rates’, which is the prediction of how users will engage with the ad according to their past behaviours. This, again, means that, to make this service attractive for advertisers, Facebook needs to have a rich database of people’s behaviours that it can then auction. This is also where the cybernetic notion of the telephone operators’ feedback emerges, again, because the past actions of people can predict their future engagement with ads. People become a feedback loop for the ad auction. The amount and frequency of actions (‘at least 15-25 times per week’) that count as an ‘estimated rate’ is also established by Facebook. In this way, the company establishes what counts as engagement, what type of sociality is worth more.

Facebook’s ad auction bidding is yet another development from the digital advertising industry – RTB. However, RTB included many media practitioners such as advertising companies, advertising networks, advertising exchanges, SSP and DSP, making this online market relatively decentralised. Facebook wants to become the main hub of the online market, setting the standards of **measurement** (especially the units, its currencies of social plugins) and the rules of trade. Such rules mean that, when Facebook thinks that the advertising practices of Pages conflict and compete with its own business model, such as too many Likes, posting promotional material or Sharing too much, then it instructs the newsfeed algorithm to ignore such actions. This shows that terms such as ‘organic’ or ‘paid’ are semantic tools for Facebook, and that, in the end, it decides how to conduct the rhythmedia.

This is also the reason why its other algorithm, FIS, is important. This algorithm scans and statistically measures all behaviours within and outside Facebook’s territory, which helps in detecting problematic behaviours. Such deviant behaviours are then **filtered** out of the database, especially when it

comes to real identities and excessive behaviours. If users do not have their real identities, they become useless as a product to be matched and sold in Facebook's ad auction, its main business model, as it offers its services to 'normal' users for free. Like its name implies, this algorithm maintains Facebook's immune system from harm.

More knowledge, then, is crucial for reconfiguring rhythmedia, the way that all the elements on Facebook are (re)ordered, timed and moved. In doing so, Facebook harnesses the knowledge it has on people to turn them into communication channels, such as in Sponsored Stories. In this feature, users are produced as channels, mediating between their peers and brands, with the aim of influencing their relations and encouraging more engagement. Reconfiguring users into communication channels without their knowledge or consent also redraws the boundaries of their bodies, whereby the private body turns into a public communication channel.

Another way that Facebook conducts rhythmedia is by using its other human processors, its paid workers – the content moderators. Whereas the telephone operators provided a competitive edge promoted as desirable objects (young, beautiful, unmarried women), content moderators are also hired as a competitive edge but are kept hidden. 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. Filtering means they intervene in the ordering of objects, users and Pages on newsfeed, without their knowledge. Content moderators are trained to become algorithms, hidden from users and other actors; they are part of the communication channel but also its filter. Their mission is to maintain the company's equilibrium according to its business model.

Content moderators are kept hidden because, as automation has developed, it is crucial to present rhythmedia as objective and technical procedures that are not influenced by other factors. Rhythmedia's various computation instruments such as algorithms, protocols and cookies are portrayed as 'organic', 'natural', 'technical' mechanisms that create the online territory. In

this way, they shape users' temporal and spatial experiences of the mediated territories. Presenting rhythmedia as 'natural' helps to disguise the politics behind the ordering rationale. It helps to avoid questions around how this ordering affects the way users understand their subjectivities, how they can behave in these territories and what they can demand from media companies.

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 behaviours are considered to be illegitimate, deviant, noisy and spam. By doing so, media companies want to avoid having important discussions on the way they establish what is a disturbance, an illegitimate behaviour and groups of people. They shift the responsibility to automation, these things they supposedly have no control over because they function in an automatic, engineered, objective way, just following orders. Such examples can be seen also in Google, which employs hidden workers known as 'search quality raters' and 'precision evaluators' (Hern, 2017; Bilić, 2017) to improve its search engine results. These workers, who operate as communication channels and filters, are responsible for the way people engage with the biggest search engine in the western world. These decisions have immense social, cultural, political and economic implications that are kept hidden and black-boxed.

Facebook also encourages users to restructure their own bodies by offering 'control mechanisms' such as the audience selector; by doing so, it hopes that users will share information that they would otherwise not make 'public'. The same strategy was also offered by browsers, which provided people with 'control' settings to enable them to refuse cookies. Here, as well, the default setting made browsers accept cookies and rely on the fact that people do not tend to change these options. The default setting of life is not something that is under people's control. In both cases, 'control' is used to make people feel safer and, hence, comfortable about sharing more information about their private lives. In this way, people are also responsible for their actions

because they are ‘empowered’ by the ‘control’ mechanisms and, therefore, the media companies cannot be blamed for any misconduct.

At the same time, in all three cases, people are educated to take care of their bodies. As discussed in Chapter 4, NYC citizens were trained to be quiet, and operators had to eat a specific diet and take exercise to keep their bodies healthy. Chapter 5 discussed how the EU Safer Internet Action Plans encouraged people to be aware of harmful and illegal content. Chapter 6 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, we see Foucault’s notions of the management of the self, in terms of training the body to internalise a certain way of being a ‘healthy’ subject, taking care of its well-being. Because people produce value for media companies, they have to be kept in good condition for monetisation and trade.

Facebook produces a specific rhythmedia in the way that all the elements are arranged in a particular time and place to shape a particular sociality, relations between people, but also between objects that will generate more value. This value can come in various forms: more engagements such as Liking, commenting, Sharing, posting, staying longer inside its territory, engaging with brands, watching videos, reading articles and persuading peers to do the same. In this way, users’ conduct is conducted by various practitioners but they are also used as conductors, as communication channels. This also mean that the very way we call platforms like Facebook ‘social’ media is influenced by the way such platforms (re)produce their own meaning of what it means to be social.

As this thesis has shown, order has its own rhythmedia and it is often influenced by financial considerations. Media practitioners’ strategies are especially important as they are often intended to **de-politicise** behaviours, and un-crowd gatherings or mass actions of people, whether offline or online. The notion of ‘filter bubbles’ (Pariser, 2011), whereby people are exposed to like-minded opinions that are guided by these media’s approach to personalisation, can be seen as one of the consequences of such

individualisation. Personalisation has been the main rhythmedia promoted by Bell, the digital advertising industry and Facebook to cater to their business models that targets individual people to produce them as products. The rhythm that media (re)construct, then, influences the way people think, feel, act, rebel, desire and interact with one another. Precisely because of this, the way that 'deviant' and illegitimate behaviours 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 thesis has opened many black-boxes, but there are many more yet to be opened. A future research direction that this thesis has opened has been to focus on more taken-for-granted, unimportant issues. The main one, at least for me, would be the **measurement** strategy discussed in this thesis. Although several researchers have already started to look in these directions, such as David Beer (2017) in *Metric Power* and Caroline Gerlitz (2016), who tries to understand what counts, these attempts are under-developed. These attempts do not account for longer historical lineages, transdisciplinary approaches that can shed more light on this issue, or the standardisation struggles behind them. 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 us. Just as spam can sometimes be a tasty and interesting thing to digest.

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Strategy/territory	Bell Telephone (offline territory)	European Union (legal territory)	Facebook (online territory)
1) New experts	Bell engineers	- Advertising associations: IAB (Interactive Advertising Bureau), EASA (European Advertising Standards Association), FEDMA (European Federation of Direct and Interactive Marketing) - Advertising companies - Advertising networks - Advertising exchange - Demand Supply Platforms (DSP), Sell Side Platforms (SSP) - Browsers - Publishers	Facebook's workers: engineers Limited expertise – advertising companies
2) Licensing	- The Noise Abatement Commission - Bell's Acoustic Consulting Service - Key Town Telephone Sales Maps	- European Commission – Soft law approach with recommendations and guidelines - Advertising associations' self-regulation standards/charters/best practice - FEDMA/IAB (Licensing registered advertising companies) - Certificate Authority (CA)	- Social plugins – controlled listening capacities - Impression Tracking Data certification - Multiple terms and conditions

3) Measurement: Instruments and units for measuring and quantifying behaviours	Instruments: Noise meter and audiometer, Taylorist measuring of operators' reaction time Unit: Decibel/seconds Use surveys: City noise (results disclosed with the public)	Instruments: Browser's server logs, IP addresses, cookies, pixels Metrics/Units: Hit, Ad/Page view, Page reach, Ad/Page impressions, click (through), unique visitors, total visits, and duration time Use surveys: The EU Safer Internet programmes	Instrument: Open Graph, newsfeed algorithm, Facebook Immune System (FIS), Social plugins and pixels, Facebook's server logs, IP address Unit: Like/Share Use surveys: Completed by users and the Feed Quality Panel (FQP) (results not disclosed to the public)
4) Training of the (digital) body	- Training the telephone operators through A Design for Life programme - Health-Appearance-Personality - The Health Talk - Food Makes a Difference - Training uncivilised groups of people to be quiet - Radio shows and newspapers educating citizens - Small fines by the police	- Using 'control' mechanisms on browsers - Showing Secure Sockets Layer (SSL) on browsers when users make purchases - Notifications on websites when users can only press agree/consent/OK - Safer Internet Programme 1999–today (filleting, rating systems, hotlines) - Categorisation of spam versus cookie	- Training users how to Like, Share and post but not in an excessive way - EdgeRank algorithm - Content moderators (reporting, blocking, un-friending) - Training to listen but in controlled ways: Listening to users' profiles, seeing when friends last logged in - Newsfeed teaching how to behave by listening to others' behaviours - Reporting problematic behaviours or social reporting
5) Restructuring territory	- Zoning commerce areas and residential areas - No street commerce - Emergence of retail stores - Victorians could use their houses for	- The European Commission's soft law approach - Experience of 'back' and 'front' ends of the browser - Creating new communication channels facilitated by cookies and operated by RTB	- Audience selector - Sponsored stories - Social plugins - Newsfeed sort

	work but blacks could not turn their houses into pubs/party venues	online (advertisements) trade, which relies on users' patterns of behaviour - Email is a private space and associated with spam. Cookies are on the web, which is a public space and, therefore, legitimate	- Play between 'organic and paid' - Ad real-time auction bidding
6) De-politicisation (un-crowding)	- Redesigning Union Square - Counselling for the telephone operators - Intervening in the telephone operators' leisure time/interests (A Design for Living Programme) to quieten their revolt against Bell	- Illegalising bulk communication - Designing browsers to have a limited amount of cookies - Personalising online experience	- Limiting people's self-expression and self-identity - Users can no longer vote on Facebook's decisions - Hiding revolt issues from newsfeed - Personalising newsfeed experience
7) Filtering	- Bell with its measuring, categorising, and archiving - The NAC by restructuring the city - Telephone operators as part of facilitating the communication channel	Filtering (both human and non-human) by anti-spam organisations, ISPs, e-mail service providers, state filters, parental filters	- Users by Liking, listening and reporting - Content moderators - Facebook's newsfeed and the FIS algorithm - Facebook's architecture

Appendix 2

For this research, I conducted several interviews that informed various sections and contributed to the collection and analysis of the data.

First, I conducted an interview with lawyers from the European Commission, who specialise in privacy: Rosa Barcello, Head of Unit Digital Privacy and Data Protection DG CNECT – European Commission, and Raffaello Di Giovanni Bezzi, Policy Officer – European Commission. The interview was conducted via telephone on 8 April 2014, and was transcribed and saved as a Word document. From that interview, I was given advice as to which laws might be relevant to this research and other bodies within the European Union that might also be useful.

Second, another interview was conducted with journalist and activist Glyn Moody, on 16 April 2014, via Skype, in order to have a better understanding of the EU legislative field, as well as to receive further advice as to which laws might be relevant and important to my research. The interview was recorded with Moody's permission and transcribed, then saved as a Word document.

Third, on 10 September 2014, I interviewed Javier Ruiz from the Open Rights Group UK at its offices in London. The interview was recorded with Ruiz's permission and transcribed, then saved as a Word document.

Fourth, via email, I interviewed Stewart Fennell, Information Officer of the Office of the Data Protection Commissioner in Ireland and received his answers in an email sent to me on 14 April 2014.

Fifth, I tried to contact and interview members of other organisations, such as the Body of Europe Regulators for Electronic Communications (BEREC), who declined my initiative on 14 April 2014.

I also contacted the UK's Information Commission Office on 8 March 2014, and received an answer on 13 March 2014 from David Dutton, Case Officer, Advice Services, Information Commissioner's Office.