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Orchestrating Media Power through Sound

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

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

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

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

Re-processing Foucault

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

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

Throughout his career, Michel Foucault developed his theory of power-knowledge through three modes of governmentality: sovereign, discipline and especially his latest work on biopolitics. The proliferation of the concepts of *biopower* and *biopolitics* emerged from Foucault's lectures at the Collège de France[1] in 1977–8, titled *Security, Territory, Population*, and the subsequent lectures in 1978–9, titled *The Birth of Biopolitics*.[2] Nevertheless, it is important to note that the concept of *biopower*, or the philosophy of life, has more than a century of history (Lemke, 2011: 9). These transformative moments in the understanding of power relations are the main focus of Foucault's work on modes of governmentality, which ask *how* power is enacted on people both as individuals and as a population. These theories were not detached from Foucault's everyday life, he was a queer political activist protesting against the institutions he was writing about, such as the prison system (he co-founded the Groupe d'Information sur les Prisons in 1971) and psychiatry. Questioning the 'natural' and rational way deviant behaviors were constructed in different fields, Foucault reveals the history and strategies that created the discourses of the abnormal. Similarly, *Media Distortions* focuses on how people are configured and understood through media, and what strategies have been deployed to categorize them as normal or deviant.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Sound as a Conceptual Framework

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

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

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

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

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

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

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

Processed Listening: Producing Knowledge in Mediated Spaces

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Karen Barad, for example, uses the example of Niels Bohr's quantum physics to explain how matter comes to matter. As Barad argues, western thought believes that beings exist as individuals who have clearly bounded attributes which are independent from their representation. Challenging such inherent characteristics of representation, she suggests performativity of discursive practices (rather than words) calling into question categories such as human and non-human. She examines the practices that make a distinction, that destabilize the creation of boundaries between phenomena (relations rather than things/objects) as distinct categories. For her, there is an intra-action, a preformativity of matters, which means that "*apparatuses are dynamic* (*re*)*configurings of the world, specific agential practices/intra-actions*[5]*/performances through which specific exclusionary boundaries are enacted*" (Barad, 2003: 816, emphasis in original). Coming from the sciences, Barad emphasizes the process of knowledge production while highlighting the politics of measurement, positioning and the lack of inherent boundaries and properties of the phenomena that is produced—it is all relational and performative.

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

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

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

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

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

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

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

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

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

Rhythmedia, or Orchestrating Sociality

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Repetition, according to Lefebvre, has a productive force as it produces soldiers as obedient subjects who understand their position both socially and choreographically, but also as an army, a whole. Repetition uses elements of behaviors/actions/relations to modify and transform bodies[9] and things. In this way, the recursive feedback loop relies on the memory of retrieval from an archive (the dynamic database) and measurements to (re)produce people and objects.

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

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

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

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

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

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

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

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

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

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

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

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

Mediated Territories

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Mediating Bodies

***Puppet Master**: Life is like a node which is born within the flow of information. As a species of life that carries DNA as its memory system… Man gains his individuality from the memories he carries. While memories may as well be the same as fantasy, it is by these memories that mankind exists. When computers made it possible to externalize memory, you should have considered all the implications that held.*
***Nakamura** (Project 6 leader): Nonsense! No matter what you say, you have no proof that you're a life-form!*
***Puppet master**: It is impossible to prove such a thing. Especially since modern science cannot define what life is… I am a life-form that was born in the sea of information. (Ghost in The Shell, 1995)*

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

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

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

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

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

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

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

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

Come to the Dark Side, We Have Cookies

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

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

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

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

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

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

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

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

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

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

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

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

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

Attempts to manipulate, play, disrupt, and test the boundaries of media technologies have been usually carried out by humans[14] and framed as 'hacking'. This media category is usually portrayed as a 'wrong' way to use technology because people who hack do not conform to the standards created by corporate, regional and global actors. Hacking can be done for various reasons, including political, curiosity, humour, commercial and criminal.

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

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

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

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

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

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

Conclusion: What's in the Mix?

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

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

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

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

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

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

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

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

Notes

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

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

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

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