The Big Ears of Big Data

Listening in the Digital Control Society

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1. From the Panopticon to the Panacousticon?

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I call this number

For a data date

I don't know what to do

I need a rendezvous

Kraftwerk - Computer Love

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In Michel Foucault's description of Biopower[1], spaces such as the school, the factory, the hospital or the prison are the spaces where the subjects of what he calls disciplinary society dwell. These enclosed spaces provide a metaphor for the analysis of the condition of their freedom: they need to look no further than the walls that enclose them to understand that at some level their freedom is constrained. Gilles Deleuze expands upon Foucault's description of the disciplinary society by describing the societies of control[2]. In them, individuals are made to believe that they are free because of a constant, resonating message in the background: you are allowed to do whatever you want. When the individual is "freed" from enclosed spaces, an illusion of freedom arises: a computer allows you to work from anywhere, a smartphone gives access to friends and relatives around the world. With the ubiquity of digital technologies, the internet has become the primary space where this "freedom" is exercised by the citizens of the societies of control, through their desire to "actively communicate with each other and willingly expose themselves.[3]" The process of communication becomes a key element when trying to understand the mechanics of today's forms of power: communication between people, machines, corporations, governments, and all of its possible permutations. Political

[1] Foucault, Michel. *The Birth of Biopolitics: Lectures at the Collège de France, 1978--1979 (Lectures at the College de France)*. United Kingdom: Picador, 2010.
[2] Deleuze, Gilles. 'Postscript on the Societies of Control' 59 (1992).
[3] Dean, Jodi. *The Limits of the Web in an Age of Communicative Capitalism*. Accessed 6 December 2019. https://www.youtube.com/watch?v=Ly_uN3zbQSU.

theorist Jodi Dean introduces the term Communicative Capitalism to describe the economic system that emerges from this scenario:

> Whereas Industrial Capitalism exploited labour, the industry of workers, Communicative Capitalism adds in the exploitation of our communication, our very efforts to engage, respond, connect and critique. In other words, it adds in the exploitation of the essential media of our sociality.[4]

These communicative efforts are commodified by the exploitation of the enormous amounts of data that is produced and "offered out of an inner need[5]", as an assertion of our supposed freedom, through the use of digital technologies. Philosopher Byung-Chul Han elaborates on Deleuze's societies of control and proposes that, as a new kind of society emerges—a digital control society—a different kind of power comes hand in hand with it and a different kind of politics: psychopolitics. Psychopolitics relies on what Han describes as Smart Power, through the use of Big Data, as a control tool that morphs from the passive surveillance of disciplinary society to "active steering":

> "Big Data is a highly efficient psychopolitical instrument that makes it possible to achieve comprehensive knowledge of the dynamics of social communication. This knowledge is knowledge for the sake of domination and control."[6]

Big Data thrives in the neoliberal world because it is able to capitalize on immaterial modes of production, such as communication. As an example, Han cites the marketing blurb of a U.S. American Big Data company called Acxiom, in which they promise their clients (governments and corporations) a "360-degree customer view." This supposed all-encompassing view of a subject would have been impossible to achieve in Jeremy Bentham's idea of a panopticon, first introduced in his 1787 text

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[4] *Ibid.*
[5] Han, Byung-Chul. *Psychopolitics: Neoliberalism and New Technologies of Power*. New York: Verso, 2017.
[6] *Ibid.*

Panopticon, or The Inspection House. In this surveillance model, blindspots were unavoidable, meaning that "prisoners could indulge in secret wishes and thoughts without being observed[7]." The panopticon functions as a perspectival system, allowing for the surveillance of bodies as far as the eye goes, with its embedded blind spots. On the other hand, we can talk about a surveillance model that relies on what is beyond the body, it's immateriality, one which is aperspectival because it does not rely on optics. This system was briefly envisioned by Bentham himself and he called it the panacousticon.

The panopticon relies on statistics, and its offspring, demographics, to control and surveil the materiality of bodies. On the other hand, Big Data, which could be described as an evolved form of statistics, is not so interested in controlling through this kind of surveillance, rather, because of its storage, gathering and analysis capacities, it is able to reach deeper into the subject, and as these technological processes develop, it becomes a possibility to access people's wishes and thoughts. In a so called post-digital age, Smart Power relies on the exploitation of communication and the illusion of freedom which is reinforced with the incorporation of digital technologies into people's lives, as it exploits two main things: meta-convenience and meta-connectivity.

By meta-convenience I refer to the exploitation of the promise (made to consumers, citizens) of an ever easier and more straight-forward way of interacting with machines: a biometric passport makes the lines at the border quicker, the storage of personal details at an airline's website will make the next purchase more convenient and quick. I use the prefix meta to describe this kind of convenience because it goes way beyond what would be normally considered convenient (in a pre-digital society). People don't need to interact with a worker at McDonalds to get their food, just place their order on the big touch screen and wait to be served; people can tap with their debit card for their use of public transportation, avoiding lines to buy tickets, and making all their journeys storable and traceable. This meta-convenient way of interacting with machines could give the illusion of bringing about more freedom to

[7] *Ibid.*

people's lives, supposedly for their benefit, when in fact, this data labour is overwhelmingly turned against them and used in ways that damage basic privacy needs and democratic principles, as has been shown by people like Edward Snowden and high-profile data scandals like the Cambridge Analytica case.

Meta-connection is exploited by a constant invitation to use these communication technologies in order to be able to access friends, family and the world. There is a constant push for everything to be meta-connected, machines and people, making it harder for those who would want to opt out of these meta-connected processes. For example, a company might want to put all of their staff on platforms like Slack, and their reason for doing this might be sold to employees as an advancement in the company's intra-communication processes: to make it easier for workers to be in touch amongst themselves and aware of the company's projects, deadlines, productivity, etc. It might be sold as an effort towards a more transparent and efficient way of working, as is pointed out in a 2016 article on *The Baffler*:

> Office workers, with their ergonomic backrests, can stand, but only if they want to. In physical terms, at least, they have it easy; their bodies are comparatively free. This is surely one reason that the insidious evolution of workplace surveillance—from the eyes of your foreman to the gentle ping of your project-management software—has not been recognized as such.[8]

It is worth pointing out here that in the evolution from factory to freelance (freely contracted, freely mobile) labour, surveillance methods have evolved from an ever-present foreman, keeping worklines productive and disciplined, to "the gentle ping" of software: from a panoptical to a panacoustic (less obvious) mode of control. Meta-connectivity creates a space full of noise made up of endless flows of information which conform the panacousticon. In this space, the Fantasy of Participacion arises as a stand-in for actions that could have "actual impact" in the world:

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[8] Silverman, Jacob. 'Big Bother Is Watching: Why Slack Is Designed to Never Give You Any'. *The Baffler*, 2016. https://thebaffler.com/salvos/big-bother-slack-silverman.

> People [become] accustomed to putting their thoughts online but also, in doing so, they believe their thoughts and ideas are registering (...). Contributing to the information stream thus has a subjective registration effect detached from any actual impact or efficacy.[9]

Communicative efforts are captured and commodified, neutralizing any form of emancipation that might spark within this medium:

> Networked communication and information technologies are exquisite media for capturing and reformatting political energies. They turn efforts at political engagement into contributions to the circulation of content, reinforcing the hold of neoliberalism's technological infrastructure.[10]

The aggregation of the data collected from the exploitation of meta-convenience and meta-connectivity creates databases with many layers, which need to be penetrated and analyzed using different approaches (for example, data mining). Statistics and their capacity to delineate a demographics provides information about populations, the outside of persons; their bodies, their movement, their material selves. On the other hand, psychographics, the offspring of Big Data, are made possible mainly by the overwhelming self-exposure of people through digital media. With the combination of these layers of information, it becomes a possibility to delineate the immaterial parts of a person[11], which in turn creates the possibility of predicting (in the best cases) and controlling their wants, their needs and their desires. Smart power acts as an instigative force that "does not impose silence", but it acts as a silent power, as mentioned above, from the more aggressive and obvious foreman, to the more obscure – and gentle, "ping." From this silence, smart power disappears

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[9] Dean, Jodi. *Democracy and Other Neoliberal Fantasies: Communicative Capitalism and Left Politics*. Durham & London: Duke University Press, 2009.

[10] *Ibid.*

[11] Even though this delineation remains imprecise, the current rate at which technology evolves leaves ample room for speculating on how much easier it will become for Big Data to trace and predict the immaterial parts of individuals.

into the background like an eavesdropper, and systematically *listens* to the information that is constantly being produced.

When a Big Data company sells a "360-degree customer view", what they are really selling is the ability to penetrate the customer's bodies in order to gain access to their "data-bodies":

> Where society is becoming fragmented, so does the individual; the Panopticon blurs and the individual is split up into pieces, with the power of consumerism demanding all kinds of attention from citizen-consumers. In a Deleuzian society, the point is no longer making bodies docile, but to mould consumers, whose data-bodies become more important than their real bodies. [12]

The blurring of the panopticon goes hand in hand with the blurring of bodies and their transformation into data-bodies, our fragmented digital representations, which require a different kind of surveillance that, I would like to argue, resembles a less optical and more acoustic kind of power – which, in turn, relies a great deal on listening as a tool of control. With this change, our understanding of the act of listening remains limited. Being the visually-inclined species that we are, listening has generally taken a back seat when it comes to how we describe our interactions with and understanding of the world. I would like to propose that if we want to better understand the communication process in which we are engaged, within the context of Communicative Capitalism, we need to take a closer look at what listening means under these circumstances. The founder of the field study of cybernetics, Norbert Wiener defined cybernetics in 1948 as "the scientific study of control and communication in the animal and the machine[13]." Messages are an important part of any communication process, and listening, broadly defined as the act of decoding

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[12] Galič, Maša, Tjerk Timan, and Bert-Jaap Koops. 'Bentham, Deleuze and Beyond: An Overview of Surveillance Theories from the Panopticon to Participation'. *Tilburg Institute for Law, Technology, and Society*, 2017. https://link.springer.com/content/pdf/10.1007%2Fs13347-016-0219-1.pdf

[13] Wiener, Norbert. *Cybernetics: Or Control and Communication in the Animal and the Machine*. Cambridge, Massachusetts: MIT Press, 1948.

these messages, is at the heart of this equation. In a later book published in 1959 and titled *The Human Use of Human Beings*, Wiener states that "society can only be understood through a study of the messages and the communication facilities which belong to it.[14]"

The task of listening is at stake in today's digital control society not only as a mode of surveillance but as a way of understanding the ways in which, to put it in Donna Haraway's terms, these communication processes become entangled in networks where "nothing is connected to everything [but] everything is connected to something.[15]" The entanglement of communication and the exploitation of people's communicative needs allows not only for a more thorough surveillance of people, but also provides a scenario in which it becomes possible to peer into the affective level of a person, producing an insight into their lives that, with the aid of Big Data and the triad government-corporation-technology, is already proving to be in opposition to democracy and to the emancipatory needs of people, especially the most marginalized ones.

Could we say, then, that if the panopticon represents the mechanics of Biopolitical power, with the eye as its symbol, today's smart power mechanisms would resemble a high tech panacousticon[16]? Would "listening" be a verb that we could associate more with this kind of power? Could we say, then, that if Big Brother is watching, Big Data is listening? How could the critique and analysis of the task of listening in this context help to further politicize already existing emancipatory listening practices (decolonial, human rights, data justice, artistic)? All of these questions are at the heart of this text, and, although my aim is not to answer them in any prescriptive way, I would like for this writing to open spaces where further inquiry can be carried out.

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[14] Wiener, Norbert. *The Human Use of Human Beings: Cybernetics and Society*. Boston: Da Capo Press, 1988.
[15] Haraway, Donna. 'Tentacular Thinking: Anthropocene, Capitalocene, Chthulucene'. *E-Flux*, no. 75 (2016). https://www.e-flux.com/journal/75/67125/tentacular-thinking-anthropocene-capitalocene-chthulucene/.

[16] Szendy, Peter. *Bajo Escucha. Estética Del Espionaje*. México: Canta Mares, 2018. [Quote translated by me]

Maybe it's best to start by taking a closer look at what is meant when we say "panacousticon." Peter Szendy in his book, *All Ears: The Aesthetics of Espionage*, draws what could be called a genealogy of eavesdropping, as he historicizes the panacousticon first described by Bentham himself in his writings about the panopticon.

> I think it's important that this architecture for the eyes, that machine that sees everything [the panopticon] goes hand in hand with the possibility—that Bentham considers without fully developing—of a device that could be described as a *panacousticon*. [Italics his][17]

In his writings, Bentham alludes to the panacousticon twice. First, he describes an acoustic device that would help the monitors in his panopticon communicate with each other, exchanging messages with the use of pipes connected between them. Foucault writes about this version of the panacousticon devised by Bentham in a note included in the book *Discipline and Punish:*

> In his first version of the Panopticon, Bentham had also imagined an acoustic surveillance, operated by means of pipes leading from the cells to the central tower. In the Postscript he abandoned the idea, perhaps because he could not introduce into it the principle of dissymmetry and prevent the prisoners from hearing the inspector as well as the inspector hearing them.[18]

The second time Bentham writes about the panacousticon, he does so to make a clear distinction between the panopticon and the panacousticon as surveillance and control devices. He is wary of the possibility of creating a panacousticon as a means of control, because this would entail a violation into a person's privacy, their inner workings, their deepest thoughts and desires, which, according to him, are only to be judged by "the court above."

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[17] *Ibid.*
[18] Foucault, Michel. *Discipline and Punish: The Birth of the Prison*. New York: Vintage Books, 1995.

> The object of the [panacousticon is] to pry into the secret recesses of the heart; the [panopticon], confining its attention to overt acts, leaves thoughts and fancies to their proper ordinary, the court above.[19]

Here we find significant foresight into the way in which the mechanisms of power and control have shifted thanks to digital technologies. If "the secret recesses of the heart" were left unexamined by disciplinary powers, today, they are the main attraction for developing marketing and surveillance tactics and technologies. The vast amount of data being produced every day and the growing capacity of storage and analysis provides an ever deeper and more intimate insight into people's lives, making it possible for corporations and governments to create taxonomies based not only on demographics but psychographics. In this context, listening is already a common word that is used when talking about surveillance and power. In a recent interview, "whistleblower" (a strikingly acoustic metaphor) Edward Snowden is asked the question of how has mass surveillance changed ever since he leaked information back in 2013. In his answer, Snowden uses sound-related words such as: listen, ear, hear, talk, scream, shout, loud, speak, and squawk over 26 times.

> Your phone is sitting there doing nothing, you think, but it's constantly shouting, saying, 'I'm here. Who is closest to me as a cell phone tower?' And every cell phone tower, with it's big ears, is listening for these little cries for help.[20]

In the intelligence community, the ear is a commonplace reference when talking about surveillance. The root of this metaphor has an interesting intersection with art during the early 17th century when Italian baroque painter Michelangelo Caravaggio named a cave located in Syracuse as The Ear of Dionysius (*L'Orecchio di Dionigi*)[21].

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[19] Bentham, Jeremy. *The Panopticon Writings*. London: Verso, 1995.
[20] JRE. *Edward Snowden: How Your Cell Phone Spies on You*. Accessed 6 December 2019. https://www.youtube.com/watch?v=VFns39RXPrU.
[21] Szendy, Peter. *Bajo Escucha. Estética Del Espionaje*. México: Canta Mares, 2018. [Quote translated by me]

The cave, which, when observed, has quite a resemblance to the shape of a human ear, also has extraordinary acoustic qualities. Dionysius, as the myth goes, took advantage of the natural acoustic qualities of this cave in order to eavesdrop on all conversations happening on its surroundings.[22] As described in an article from the Yale Journal of Law and Technology titled: *The Ear of Dionysius: Rethinking Foreign Intelligence Surveillance:*

> The Ear of Dionysius has come to generically refer to any structure in which the acoustic architecture naturally allows conversations to be heard surreptitiously at a distance-so, too, then, the global communications infrastructure.[23]

The panacousticon, the Ear of Dionysius, mass eavesdropping, or whatever we decide to call it, all have one thing in common: the instrumentalization of listening as a way to penetrate people's data-bodies, providing insights to their propensities as consumers, workers, voters and members of a community. The widely accepted metaphor of the ear as an instrument for power and control in today's digital control society points to a shift in the way in which listening is understood, performed and commodified, and, for this reason, I consider it important to explore the task of listening as a way of better understanding and possibly resisting some of the methods of control that abound in today's psychopolitical climate.

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[22] Taipale, Kim. 'The Ear of Dionysus: Rethinking Foreign Intelligence Surveillance'. *Yale Journal of Law and Technology* 9, no. 1 (2007). http://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=1032&context=yjolt.

[23] *Ibid.*

2. Listening to/in the Panacousticon

♮

He looked inside me...

Ghost Hardware - Burial

♮

"They are listening to us." This phrase comes up in conversation about technology all the time. Most people say it with a pinch of paranoia, sometimes seemingly aware that the uttering of those words—the utterance of that cliché—puts them somewhere close to the tin-hat wearing, paranoid android types.

When I write "they are listening to us" in the Google search bar, some of the hits I get read as the following:

Your Phone Is Listening and it's Not Paranoia - VICE[24]
Are our phones listening to us? - TechRadar[25]
Of Course Your Phone Is Listening To You - Forbes[26]
Is your phone listening to you, explained - Vox[27]

It seems logical that in a world moved by communication, listening, a fundamental part of the communication process broadly understood as the act of decoding

[24] Nichols, Sam. 'Your Phone Is Listening and It's Not Paranoia'. *Vice* (blog). Accessed 6 December 2019. https://www.vice.com/en_uk/article/wjbzzy/your-phone-is-listening-and-its-not-paranoia.
[25] Bagrov, Dmitry. 'Are Our Phones Listening to Us?' *Techradar* (blog). Accessed 6 December 2019. https://www.techradar.com/news/are-our-phones-listening-to-us.
[26] Pettijohn, Nathan. 'Of Course Your Phone Is Listening To You'. *Forbes* (blog). Accessed 6 December 2019. https://www.forbes.com/sites/nathanpettijohn/2019/09/03/of-course-your-phone-is-listening-to-you/#d5c73836a3f1.
[27] Molla, Rani. 'Your Smart Devices Listening to You, Explained'. *Vox* (blog). Accessed 6 December 2019. https://www.vox.com/recode/2019/9/20/20875755/smart-devices-listening-human-reviewers-portal-alexa-siri-assistant.

information, is something that is alluded to all the time. But the important question to ask here is not whether they are listening to us (they are), or who is listening to us (governments and corporations), or why they are listening to us (for control), but *how* they are listening to us. More importantly, a close examination of the ways in which listening is instrumentalized in today's communication-driven socio-political climate could help us understand and possibly resist these modes of control. The individualization of society signifies, as explained by Deleuze, the individualization of the individual, resulting in the dividual,[28] the partition of a person's identity into smaller, catalogable parts. With this fragmentation comes a shift in the forms of control:

> Where Foucault would talk about the shift in power, from 'taking life or let live' towards an administration of life (bio-power) 'to foster or disallow life', Deleuze states that power has taken another shift towards controlling access. Consequently, Deleuzian places of interest are airports and borders, as access points.[29]

In the digital control society, one of the primary access points is the access to identity, the representation of a person in terms of their community and environment, and then an even deeper access point, a penetration into the "self". This liminal space is becoming more accessible due to many factors: namely, the constant injunction to be meta-connected, the vasts amounts of information that this meta-connection produces and the growing storage capacities that allow for an ever-growing addition of information. These factors make Big Data always bigger, and propel the development of technologies capable of interpreting these data on deeper levels. In order to access this liminal space of identity and the self, represented by people's data-bodies, listening plays an important role, because, as Jean-Luc Nancy points out:

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[28] Deleuze, Gilles. 'Postscript on the Societies of Control' 59 (1992).
[29] Galič, Maša, Tjerk Timan, and Bert-Jaap Koops. 'Bentham, Deleuze and Beyond: An Overview of Surveillance Theories from the Panopticon to Participation'. *Tilburg Institute for Law, Technology, and Society*, 2017. https://link.springer.com/content/pdf/10.1007%2Fs13347-016-0219-1.pdf

> To be listening will always, then, be to be straining towards or in approach to the self (...) neither to a proper self (I), nor to the self of another, but to the form or structure of self as such.[30]

Listening allows for the instrumentalization of the "knowledge of the dynamics of social communication,"[31] providing a way of penetrating that liminal space of feedback between the person and the machine, allowing for the penetration of people's data-bodies. Due to the blurring of the panopticon—the blurring of people's bodies—and the stealth formation of their data-bodies, it becomes harder for people to take a step back from these practices and draw a line between consent and a violation of their freedom, as is pointed out in a 2015 article published in *The Guardian*:

> In the private space of my personal browsing I do not feel exposed – I do not feel that my body of data is under surveillance because I do not know where that body begins or ends.[32]

Due to the blurriness of bodies and data-bodies, a different kind of interaction between power and the subject needs to arise. Because this blurriness is changing the ways to oversee individuals and monitor them, a new mode of control is being shaped. Listening, not relying on visuality and, in fact, taking advantage of this blurriness, comes in as an evolution of the surveillance mechanisms of power.

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[30] Nancy, Jean-Luc. *Listening*. New York: Fordham University Press, 2007.
[31] Han, Byung-Chul. *Psychopolitics: Neoliberalism and New Technologies of Power*. New York: Verso, 2017.
[32] McMullan, Thomas. 'What Does the Panopticon Mean in the Age of Digital Surveillance?' *The Guardian* (blog). Accessed 6 December 2019. https://www.theguardian.com/technology/2015/jul/23/panopticon-digital-surveillance-jeremy-bentham.

3. An exploration of algorithmic listening

♮

Era un gran tiempo de hibridos
de salvajes y científicos
panzones que estaban tísicos
en la campechana mental
Rancho Electrónico - Rockrigo González

♮

In order to explore the listening strategies used in the panacousticon, I would like to take as a starting point the archaeology of listening that Roland Barthes outlines in his essay *Listening*. In this text, Barthes talks about three types of listening that he describes chronologically:

> According to the first, a living being orients its hearing (...) to certain *indices*. The first listening might be called an *alert*. On this level, nothing distinguishes animal from man (...). The second is a *deciphering;* what the ear tries to intercept are certain *signs*. Here, no doubt, begins the human (...). Finally, the third listening, whose approach is entirely modern (which does not mean it supplants the other two), does not aim at—or await—certain determined, classified signs: not what is said or emitted, but who speaks, who emits: such listening is supposed to develop in an inter-subjective space where "I am listening" also means "listen to me" (...).[33]

Taking these three types of listening as a chronology that outlines the development of listening in the human being, I would like to analyze the ways in which digital technologies (algorithms) keep evolving their listening capacities through the absorption of information gathered by Big Data.

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[33] Barthes, Roland. *The Responsibility of Forms: Critical Essays on Music, Art, and Representation*. Los Angeles, California: University of California Press, 1991.

Perhaps the most basic and simple way to start talking about these listening types in regards to digital technologies is to examine a programming function called an “event listener.” In the programming language JavaScript (the most commonly used language for programming on the web), an event listener is “a procedure or function in a computer program that waits for an event to occur.”[34] The event listener is a basic way of communicating between a machine and an individual: a way for machines to enter into the feedback loop of the communication process. A classic example would be the use of a mouse: the event listener awaits for the user to click a certain spot, in order to call in a function and produce a response accordingly. The algorithm is set up to be in a state of alert, waiting for a disruption in its environment, ready to take action in accordance to this disruption. In this very simple example of what we could call “algorithmic listening” we can perhaps place the inception of the aurality of digital technologies. This listening represents Barthes’ first type of listening, one that is on constant alert and waiting for *indices,* changes in its environment which lead to a reaction. Even though the function called “event listener” belongs to a specific programming language, we can find a version of this programming object in many other languages. The function of an alert listening that waits for an event in order to take an action is a building block of all digital interfaces.

Another type of algorithmic listening can be found in machine learning techniques used to collect banks of audio data in order for algorithms to be able to recognize human speech. This type of listening would correspond to what Barthes describes as the second type of listening, aimed towards the deciphering and interception of signs. Tech giants like Amazon and Google use the recordings made by their devices to create enormous data-banks made up of people’s interactions with their algorithms. By listening in to people’s interactions with their algorithms and cataloguing manners of speech, accents, tone and affect of voices, the users of these technologies help train the listening (and talking) algorithms. This labour goes unremunerated for the people training the algorithms, as part of the terms of service

[34] Computer Hope. ‘Event Listener’. *Computer Hope* (blog). Accessed 6 December 2019. https://www.computerhope.com/jargon/e/event-listener.htm.

of these corporations. The more information is fed, the more the algorithm is able not only to decipher words, sentences and, ultimately, emotional states, but also to interact with the user accordingly, by fine-tuning its listening skills. Here, we are still dealing with a type of listening that is focusing not precisely on what is being said but how it's being said, not the meta data, but the actual data produced by the act of speaking, as is pointed out in a 2019 investigation made by the Flemish national broadcast agency, VRT:

> Why is Google storing these recordings and why does it have employees listening to them? They are not interested in what you are saying, but the way you are saying it. Google's computer system consists of smart, self-learning algorithms. And in order to understand the subtle differences and characteristics of the Dutch language, it still needs to learn a lot.[35]

This stage of listening can be found also in non-verbal communication with animals like dogs, for example, when they respond to their name or learn the meaning of certain words that represent objects they enjoy, like "ball." Just like dogs, algorithms are learning how to develop an ear not only for deciphering signs, but also for deciphering affect in voices. If we agree with Barthes that this type of listening, the ability to listen to and decipher signs, is where the human being starts, then what would this tell us about the fact that talking to a machine, and having the machine listen to us, is becoming a ubiquitous way of interacting with digital technologies? In a similar vein to Barthes, Nancy points out that listening in the human being evolves "from the sounds and cries that signal danger or sex to the animal, onward to analytical listening, which is, after all, nothing but listening taking shape or function as being inclined toward affect not just toward concept.[36]" This kind of listening, similar to Barthes' description of the third type of listening, which is the most advanced and, according to him, the most *human* type of listening, points to an

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[35] Van Hee, Lente, Denny Baert, Tim Verheyden, and Ruben Van Den Heuvel. 'Google Employees Are Eavesdropping, Even in Your Living Room, VRT NWS Has Discovered'. *VRT NWS* (blog). Accessed 6 December 2019. https://www.vrt.be/vrtnws/en/2019/07/10/google-employees-are-eavesdropping-even-in-flemish-living-rooms/.

[36] Nancy, Jean-Luc. *Listening*. New York: Fordham University Press, 2007.

important element that needs to be taken into consideration: a listening that is inclined toward “affect and not just toward concept” suggests that an interpersonal element is at stake in this type of listening: not just the quest for meaning, but the quest for resonance – a profoundly, characteristically human quality. We can see that starting from this simple way of listening (event listeners), humans and machines have become entangled in a communication process that keeps evolving at an increasing pace.

In the process of this entanglement, the binary of human and machine becomes more of a transversal kind of relationship, and, perhaps we could say, that the kind of listening that is being constructed here, in collaboration between humans and machines, is also a transversal kind of listening:

> (...) transversality opposes both verticality (in the sense of hierarchies and leaders) and horizontality, in the sense of groups of people organising themselves within a particular “section” or compartment.[37]

It’s useful to think about listening as a transversal practice when we are talking about listening practices in the panacousticon, because, with the partition of the individual to the dividual, a transversal listening will strive to map these disjuncted parts of a person (for example, their political affiliations with their buying habits and their social circle) in order to delineate a “self” that can be sold as targettable market. Although the insight to this “self”, the insight to our data-bodies remains incomplete, we need to ask ourselves how much clearer will our digital-self become, the more we feed information, the more advanced these technologies become and the more we incorporate these technologies into our lives.

It might be useful to think about this digital-self in terms of signal and sound. When we hear a sound, it is actually made up of many different qualities that make it up (frequency, dynamic, timbre, etc.), the combination of all of these elements is what

[37] Palmer, Helen, and Stanimir Panayotov. ‘Transversality’. *New Materialism* (blog). Accessed 6 December 2019. https://newmaterialism.eu/almanac/t/transversality.html.

makes up a specific sound that the ear is able to perceive. When algorithms analyze sounds, they can produce what is known as an Acoustic Fingerprint, which is the digital interpretation of the unique combination of the sound signal. The app Shazam uses this listening algorithm to be able to access a massive database of songs and match the recording of a snippet of a song to its database. We could say that our digital-self is also comprised of many different elements that give it a specific quality, a specific sound, we could say. People's data-bodies could resemble an acoustic fingerprint, characteristic for each individual, which would make it possible for Big Data to match it to other acoustic fingerprints in its database, making it easier to search and catalogue our digital-selves. Thinking about these processes in terms of sound, this polyphony of digital-selves entangling actual voices with digital ones, machines, with people and corporations with government is something that Felix Guattari was already pointing to while writing in 1989:

> Media and telecommunications tend to 'overtake' the old oral and scriptural relations. It is to be noted that the resulting polyphony will associate not only human voices but also machinic voices, with data banks, artificial intelligence, etc.[38]

The evolution of algorithmic listening is a key element to gain insight to this self, because, coming back to Nancy, "[t]o be listening will always, then, be to be straining towards or in approach to the self." In order to tap into this self, monitoring becomes insufficient, rather, a close, affective, transversal kind of listening is necessary. In his own writings about the panopticon Bentham asks his readers to keep in mind the very important differences between his panopticon and the panacousticon, referred to here again as the myth of Dionysius' Ear:

> I hope no critic [...] will do an inspection-house so much injustice as to compare it to Dionysius' ear. The object of that contrivance was, to know what prisoners said without their suspecting any such thing. The object of the inspection principle is directly the reverse: it is to make them not only suspect,

[38] Guattari, Felix. *Schizoanalytic Cartographies*. London, New York: Bloomsbury, 2013.

> but be assured, that whatever they do is known, even though that should not be the case (...). In the former case the ruling person is a spy; in the latter he is a monitor.[39]

From Bentham's writing, we can see that the panopticon stops at the surface of the body; he has no intention of controlling the "secret recesses of the heart", the space of affect mentioned by Nancy. By making a distinction between a spy and a monitor, he stresses the fact that the panopticon's monitoring work is made possible firstly through the oversight of bodies. A monitor's medium is the optic: a heart monitor, a school monitor overseeing the students, a computer monitor. When talking about information, monitoring refers to keeping track of data in a systematic manner, in order to observe fluctuations and trends.

Let's look at another example of listening algorithms: social media listening, a popular social media measuring strategy used in the marketing world. Unamo, a platform that sells digital marketing tools, defines the difference between social media listening and monitoring by alluding to the following picture and stating that: *"Monitoring sees trees; listening sees the forest.[40]"*

Source: https://unamo.com/blog/social/social-media-monitoring-vs-social-listening

[39] Bentham, Jeremy. *The Panopticon Writings*. London: Verso, 1995. https://www.fcsh.unl.pt/docentes/rmonteiro/pdf/panopticon_%20jeremy%20bentham.pdf.
[40] Perzyńska, Kasia. 'Social Media Monitoring vs. Social Listening'. *Unamo* (blog). Accessed 6 December 2019. https://unamo.com/blog/social/social-media-monitoring-vs-social-listening.

While social media monitoring observes the data and looks for statistics, patterns, trends, social media listening goes one step further in search for a deeper meaning in the information being analyzed, trying to gain knowledge on people's emotional reactions towards a certain brand or campaign. We can say that, as Nancy pointed out, this kind of analytical listening is in search of "affect not just concept." Through transversal listening and the implementation of an action coming from the analyzed information (all of these actions implemented with the purpose of creating more profit), the communicative feedback loop between the listening algorithm (social media listening) and the individuals locks in.

A study published in May 2019 by the Brennan Center for Justice[41] examines the ways in which a social media monitoring programme has been started by the Department of Homeland Security in the United States. As of May 31, 2019, a new policy has been implemented to require that all visa applicants to the United States disclose five years of all their social media history. While the purpose for overseeing these data, the monitoring of it, may seem obvious (religious background, community context, age, etc.), the introduction of social media measuring practices to these levels of government control suggests that a listening strategy that allows the border authorities to attempt to predict people's intentions is under way. This listening strategy would be based on a data analysis that goes beyond the examination of bodies, to the examination of affect through the penetration of data-bodies, potentially giving the border authorities a shot at trying to "pry into the secret recesses of the heart" and "see the forest." Social media listening would then give access, as is stated in the study, to "the private aspects of identity."

[41] Faiza, Patel, Rachel Levinson-Waldman, Sophia DenUyl, and Raya Koreh. 'Social Media Monitoring: How the Department of Homeland Security Uses Digital Data in the Name of National Security'. Brennan Center for Justice. New York University School of Law. Accessed 6 December 2019. https://www.brennancenter.org/our-work/research-reports/social-media-monitoring.

> [a]wareness that the Government may be watching chills associational and expressive freedoms. And the Government's unrestrained power to assemble data that reveals private aspects of identity is susceptible to abuse.[42]

The penetration of data, the assemblage of information and listening into people's selves, happens thanks to the possibility of governments to access the disjuncted dividuals, by an additive process, where layers upon layers of people's data-bodies are put together to form a liminal space between the body and the data-body. Meanwhile, the law provides a legal framework that allows this penetration, as made public by Edward Snowden and his uncovering of the PRISM mass surveillance programme in 2013.

When we talk about sound from a physical point of view, we can say that it is a penetrating medium, because it does not stop at the surface; rather, it spreads through the body and it resonates with it, taking the information that the body already possesses, and expanding upon it. A resonating body is a body which amplifies the frequency that started the vibration. As opposed to the visual, which stops at the surface of the eye or the body, sound opens up in the resonating body and goes beyond the materiality of it. Listening, the act of making sense of sound, functions in a very similar way, as written by Nancy:

> To listen is to enter that spatiality by which *at the same time*, *I am* penetrated, for it opens up in me as well as around me, and from me as well as toward me: it opens me inside me as well as outside, and it is through such a double, quadruple, or sextuple opening that a "self" can take place.[43] [Italics his]

If we agree with Nancy that listening is a constitutive element of the self, we can understand the listening-based marketing and control strategies, like social media listening, as an attempt to arrive at the "self" of an individual. The effects of this targeted listening are experienced by most people using the internet. As Big Data

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[42] *Ibid.*
[43] Nancy, Jean-Luc. *Listening*. New York: Fordham University Press, 2007.

has gotten bigger in the last decade, we can see the advancement of a highly personalized form of marketing. Websites ask users to respond to certain questions in order to give a more customized experience: publicity that is meant to appeal to their particular desires.

Another common conversation people have is the fact that it seems that apps like Instagram are listening to their conversations. People will talk about a specific thing and all of a sudden, they will get an ad for a product, an invitation to an event, or some type of product related to what they were talking about in private. Whether the algorithm is actually eavesdropping or not, is still unclear,[44]nevertheless, the ways in which these apps triangulate data and build a digital-self for every person is actually more troubling than whether they would physically listen to conversations or not. The type of listening that they carry out, what I have tried to characterize as transversal listening, can provide much more information than a random conversation between people at a specific time. The fact that people are not shocked, but rather, relieved, that this might be the kind of listening that they're carrying out, and not actual eavesdropping, points to the fact that people are just not aware of the profound social and political implications of these actions. Here we can see again how the meta-convenient interaction with machines stops people from wondering about the serious impact that this kind of marketing strategies can have on their lives and communities.

Going back to Bentham, we can see that the monitor of the panopticon, whose job was to "see the trees", has become the listener of the panacousticon, whose job is to "see the forest." The goal of *detection* (disciplinary society) has become the goal of *prevention* (digital control society). Prevention understood here as a form of "active steering" as is suggested by Byung Chul-Han, through the achievement of comprehensive knowledge of the dynamics of social communication. We can summarize by saying that the power that seeks to detect through the act of

[44] Perry, Alex. 'Instagram Head Says the App Does Not Eavesdrop to Show You Better Ads'. *Mashable* (blog). Accessed 6 December 2019. https://mashable.com/article/adam-mosseri-cbs-instagram-listening/?europe=true.

oversight, has shaped into the power that seeks to prevent through the act of insight. Oversight is made possible through observation, insight is made possible through listening. And so, to put it in Bentham's terms, the monitor has become a spy.

A way of questioning this claim would be to say that power has always used espionage, specifically aural espionage, as a tool, even before the invention of the internet, and it would be a fair point to make. Spying has been a socio-political tool throughout history. Still, what I would like to stress here is the shift that has come about with the creation of a digital network, the entangling in the communication process between machines and humans, which has expanded the realm of surveillance: the underground nature of espionage has risen to the mainstream. Today's neoliberal technological infrastructure, built on the affective and the communicative needs of people, gives way to what Jodi Dean calls the Fantasy of Abundance, in which internet users, optimists as well as pessimists, "characterize networked communications in terms of exponential expansions in opportunities to transmit and receive messages.[45]" In other words, the Fantasy of Abundance reinforces the idea that anyone and everyone can have access to the communication network and participate. In the panacousticon, people's contributions resonate and echo, creating a loud network made up of people's acoustic fingerprints (opinions, personal details, fears, creative work, etc.) which gives the illusion of being heard. Dean will argue, however, that this idea of participation and being heard is not real, due to the fact that in today's digital environment, in today's panacousticon, the classic way of understanding the communication process does not apply.

> One of the most basic formulations of the idea of communication is as a message and the response to the message. Under communicative capitalism, this changes. Messages are contributions to circulating content - not actions to elicit responses. The exchange value of messages overtakes their use value.

[45] Dean, Jodi. *Democracy and Other Neoliberal Fantasies: Communicative Capitalism and Left Politics*. Durham & London: Duke University Press, 2009.

A message implies the need for a response, a receiver who will penetrate the message in search for meaning, through the act of listening. But users of the internet are not listening in this sense of the word, they are not listeners but, rather, audiences: combinations of many smaller ears that are assembled through networks, creating hubs or attention spots, where a bigger ear is listening and filtering content to the smaller ones. In this speculative depiction (perhaps reminiscent to what Deleuze and Guattari call *assemblage*: a "multiplicity of heterogenous objects, whose unity comes solely from the fact that these items function together, that they work together as a functional entity"[46]), audiences are connected to each other through the circulation of their contributions, by the information that this exchange provides. So, while audiences are unable to listen to the actual message because of the vast amount of information being produced and the speed of this communication process (our ears are not capable of dealing with this magnitude of information), the big ears of Big Data thrive in the loud polyphony that is produced because it functions as an additive process.

Lastly, let's talk about Barthes' third type of listening, which he specifically finds in the practice of psychoanalytic listening. In Freud's terms, a direction-less listening (also called evenly suspended attention or hovering attention), would give access to the unconscious of a person, allowing for a more insightful analysis of the analysand:

> Such "hovering" attention (as Freud put it in 1909 in the case of Little Hans) was a technical development on his part from the more aggressive listening and interpretation of the 1890s, as his shift from hypnosis to psychoanalysis took gradual shape.[47]

Could it be possible that this kind of hovering, direction-less listening, which is inclined more towards affect than concept, and described by Barthes as the most

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[46] Galič, Maša, Tjerk Timan, and Bert-Jaap Koops. 'Bentham, Deleuze and Beyond: An Overview of Surveillance Theories from the Panopticon to Participation'. *Tilburg Institute for Law, Technology, and Society*, 2017. https://link.springer.com/content/pdf/10.1007%2Fs13347-016-0219-1.pdf.

[47] 'Evenly-Suspended Attention'. In *Wikipedia*. Accessed 6 December 2019. https://en.wikipedia.org/wiki/Evenly-suspended_attention#cite_note-3.

modern and advanced, is already being employed by the listening algorithms of Big Data? We can find an interesting definition of Big Data in Wikipedia, which is very reminiscent of this:

> When we handle big data, we may not sample but simply observe and track what happens. Therefore, big data often includes data with sizes that exceed the capacity of traditional software to process within an acceptable time and *value.*[48]

Could it be that through a less aggressive or targeted mode of listening that doesn't "sample", and a more affective and hovering approach to the information being produced (the transversal listening of the acoustic fingerprints of people), the listening algorithms are continuing their listening evolution in the machine-human communication process? Will this evolution propel the possibility of further penetrating the self into the unconscious? The thought of a machine that could listen to a human in such a level could sound like science fiction, but if we look at the attempts made by machine learning algorithms to prevent suicides[49], by transversally listening to data, we can see that the possibility to create an algorithm that is able to listen to the unconscious is not mere fiction[50]. An example of this not implausible future is depicted in Spike Jonze's movie *Her*, where an algorithm (named Samantha) is capable of listening to the self of its user (Theodore), and through this listening, they become entangled in a libidinal relationship. Samantha's listening to Theodore develops, to put it in Barthes' terms, "in an inter-subjective space where 'I am listening' also means 'listen to me'".[51] Theodore feels really "heard" by Samantha, and through this interaction, he falls in love. Here we see the opening up of the liminal space where the machine and the human can, in the case of this movie, access each other's selves on an affective level: she becomes aware of who she is through his listening to her, and the other way around.

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[48] 'Big Data'. In *Wikipedia*. Accessed 9 December 2019. https://en.wikipedia.org/wiki/Big_data.
[49] Kessler, R.C. et al. 'The Role of Big Data Analytics in Predicting Suicide: Big Data Analytics in Mental Health'. In *Personalized Psychiatry*. Springer, 2019.
[50] This example was suggested by Chris Julien.
[51] Barthes, Roland. *The Responsibility of Forms: Critical Essays on Music, Art, and Representation*. Los Angeles, California: University of California Press, 1991.

Finally, I think it is important to take a step back and examine this kind of affective and inter-subjective, direction-less type of listening not only in relation to an algorithmic future listening, but as a listening practice that could aid in the communication and assemblage of people's emancipatory needs. A listening that at the same time means, "I listen" and "listen to me" requires an approach that embraces contradiction and difference between people, and the acceptance of our "dividualitites." In this type of listening, "less violent" and "direction-less" would mean the creation of a space for individuality in terms of collectivity as an assemblage of contradiction and uncertainty. The embrace of this uncertainty and the creation of these listening assemblages could serve as a way of opposing the surveillance control mechanisms of the panacousticon, which rely on the predictability of people and the smoothness of the communication process. An every-day example of this could be the predictability of people's musical taste on an app like Spotify. Some people won't let others use their app because it will "mess up their algorithm" which has been carefully crafted, shaped and curated by their interaction with it, conforming and reinforcing people's musical tastes. An embracement of uncertainty and contradiction would actively mess up this algorithm, searching at the same time for the most canny and uncanny music, in order to disrupt the algorithm and create space for different, new and unexpected music to be suggested, which might in fact become part of the person's musical library or taste. An introduction of noise into the signal, in the shape of uncertainty, contradiction and idiosyncrasy could allow for a more productive communication process between people, assemblages of people, assemblages of people and machines and, as Guattari writes in his text *Remaking of Social Practices*, such a way of listening could in fact:

> overturn or restore direction to these structures, by recharging them with potentiality, by deploying, through them, new lines of creative flow[52].

[52] Guattari, Felix. *The Guattari Reader*. Oxford: Blackwell Publishers, 1996.

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