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Introduction

How A City Listens is the fifth and final zine of the first iteration of Eindhoven Footnotes. It initially set out to explore the link between technology and archeology under the title of A New Dark Age. However due to various reasons, none of them dramatic, the focus shifted to the voice and its place in a city. This publication is the result of the close collaboration between Onomatopee and the Erfgoedhuis Eindhoven (Heritage House), having been hosted by them on numerous occasions over the past nine months. These interactions meant that our approach and thinking towards the expansive and often grandiose subject of technology were humbled, and literally grounded in their collection of Eindhovenian artefacts. Instead of taking the tools archaeologists use to research and understand the past, and applying them to scan our present and future, we decided to take Louise Gholam's project as our datum point. The decision was made to take a step back and let people talk, think and relate for themselves. Using their voice, people were invited to create an alternative verbal map of Eindhoven; one that that can challenge, alter and hopefully disrupt the preconceived, rigid plan of the city. Here sound is used as a means of exploring our position in a technocratic surveillance city.



Chamber to test 5G antennas - TU/e Eindhoven

From capture to amplification, the examples used in this publication highlight the contrasts a different pair of hands can make when holding the same technology.

Sorama is an Eindhoven based tech company that aims to become the best in the world for identifying and reducing unwanted noise. One of their developments, the Listener64, is an acoustic camera placed on the streets of Eindhoven: capture. It has to be said that this zine immediately jumped to the most dystopian conclusion such a technology could achieve. However after having an engaging and frank discussion with their CEO Rick Scholte about surveillance, data collection and the biases of algorithms a more positive conclusion was come to. In the interview Rick said something quite important, that maybe it would be unethical to not



Sorama's Listener64 acoustic camera



from Sorama's website

be the ones developing such technologies because someone else will: so why not do and talk about it? While Footnotes hasn't come across such a well positioned company or CEO we still believe that a question like that only goes part of the way. They have created it but the public are not talking about it. When a technology is placed on our streets we have to have scepticism as our immediate reflex. We must always question and critique. For the sake of critique the Listener64 will be separated from Sorama's intentions and used an emblematic technology. Doing so lets us see it for its function of capture, which is an application that knows no solidarity. Conversely, Louise Gholam's project Ha©kacity is an attempt to allow citizens the chance to reclaim public space using their voices. Inspired by Souks and the Hakawati (local storytellers and inspiration for the project's name) it aims to boost our democratic voice in the city by broadcasting and mapping experiences and stories. Through personal narratives, citizens will act as public storytellers giving a crowdsourced database for emotional knowledge challenging the often impersonal nature of the smart city: amplification. The essay A Fable: From Eindhoven to Tianjin will probe the tangible link between smart city dynamics in China and The Netherlands: a link that many don't see or don't want to talk about. The existence of such a connection forces us to ask if smart cities are ever anything more than exercises in total control. Finally an interview with the curator Kris Dittel, the co-curator of the exhibition Post-Opera, will discuss the voice, its relation to public space and possible ways we can subvert our algorithmically pre-defined future.



A Fable: From Eindhoven to Tianjin

Before we start: as was mentioned in the introduction the Listener64 sound camera will be used as an example in its emblematic sense. While Sorama have no intentions of selling their technologies to China we still see systems, funding and institutions in place that would take advantage of such devices. They have also said that they are not interested in the 'Facebook style' of data harvesting and commodification. So this text is an exercise in magic realism, a kind of too close for comfort speculation, where the company and the Listener64 sound camera becomes simply, The Listener.

Noise, a sound that is considered loud or disturbing. Cities, a coalescence of people and things producing sound that can be considered noise.

While Footnotes of course acknowledges the literary legacy of magic realism, magic is referenced here in terms used by Natalie Kane, Digital Curator at the V&A. https://ndkane.wordpress.com/ It's the act of consideration that has to be opened up and interrogated. Because now definitions are being outsourced to "Smart algorithms" that decide what's noise and what's aggression. It's through thousands of years of urban dwelling that we have come to a kind of communal consensus on what can be considered noise and aggression. We can feel these factors with our bodies, we can read it in the eyes of someone or feel it in the clenching of our jaws when we hear the screeching of a car. But what happens when these 'feelings'—because that's what they are—are outsourced to sensors and algorithms? What do these things miss? The technologist and author Adam Greenfield expands on this in his book 'Radical Technologies':



"However thoroughly sensors might be deployed in a city, they'll only ever capture the qualities about the world that are amenable to capture. As the architect and criticaldata scholar Laura Kurgan has argued, "we measure the things that are easy to measure.... the things that are cheap to measure," and this suggests that sensors, however widely deployed, will only ever yield a partial picture of the world."

This partial picture is also completely dependant on what is fed into the system and how the network processes it. Who sets the frame for such things and how big is the canvas? It's these questions that we have to keep asking, even as the weight of the debate has become so normalised that we no longer feel it. So how should we react when we hear our smart city of Eindhoven has implemented The Listener in public space? On the company's website they explain that:

"Cities are full of sound and sound contains tons of information. However, sound pollution is also the number 2nd (sic) most harmful environmental factor for humans after air pollution. Insights are required to track the source of pollution and make smart use of the information contained in your city sounds. The Sorama Smart City Listener makes sound insightful by localization, quantification and classification of sound. Sorama sound cameras enable a city to improve the sound environment and improve safety and security." Here the word information can be replaced with data: sound contains tons of data. And if we're being skeptical about it we can swap the word insightful for profitable. This collection of data is wrapped up in the earnest beliefs of "improving" society through networked surveillance technology. But this has ramifications that stretch further than the company's intents. To quote Greenfield again:

"At present the Internet of Things is the most tangible material manifestation of a desire to measure and control the world around us. But as an apparatus of capture, it is merely means to an end. The end remains the quantification of the processes of life at every scale; their transformation into digital data; and the use of that data for analysis, the development of projective simulation and the training of machine learning algorithms. It behooves us to spend some time thinking about what comes along for the ride, every time we invoke this complex of ideas, to consider where it might have come from and what kind of world it is suggesting we live in."

The Listener is part of the Strijp-S Living Lab initiative which is in turn part of the larger Triangulum Project, initiated by the German research institute Fraunhofer IAO.

- I https://static1.squarespace.com/static/5aec19464eddecf8ba36f73e/t/5c8798c4b208fcd94f38328d/1552390343531/ Sorama+Smart+City+Listener+2019.pdf
- Greenfield, Adam. Radical Technologies: The Design of Everyday Life. London: Verso, 2017, 59

Greenfield, Adam. Radical Technologies: The Design of Everyday Life. London: Verso, 2017, 53



The aim of the Triangulum Project is to demonstrate, disseminate and replicate solutions and frameworks for Europe's future smart cities. When placed in this constellation Eindhoven is described as a 'testbed' and 'lab' and its citizens are therefore reduced to test subjects. This want of universality, of a one algorithm fits all scenarios, is precisely what Footnotes rails against. How can the almost infinite peculiarities of humanity be reduced to data points? Surely any attempt to do so can end up nudging us all into homogeneity: ideal citizen-consumers whose actions can be predicted, targeted and then manipulated.

As well as the social repercussions of wanting to reduce sound pollution The Listener is also able to track noises through space. Using their MEMS microphones,⁵ sound sources can be localised to within meters. And when linked to other sensors like CCTV those considered to be making a disturbance can be tracked and brought to the attention of

The application of MEMS (microelectro-mechanical systems) technology to microphones has led to the development of small microphones with very high performance. the observers. These devices are touted as being powered by 'smart algorithms and machine learning' that can determine the sound of breaking glass, gunshots, alarms and others. Yet all we need do to make this scenario absurdly dystopian would be to replace the word 'smart' with sniffer.

In 2014 Amazon filed a patent for an algorithm that could sniff conversations for trigger words. It would identify words that indicate a level of interest in the user and extract the adjacent audio. Intended for their domestic smart speakers this algorithm would listen in on our daily lives. Once it had identified something 'it could be transmitted to an appropriate location accessible to entities such as advertisers or content providers'.

It doesn't take a huge leap of the imagination to conflate these two technologies, and thought experiments like those can serve as exercises to show how fragile our civil liberties actually are.

United States Patent Application Publication, http:// pdfaiw.uspto.gov/.aiw?docid=20140337131



But if this all sounds like it's just needless doom and gloom then you need look no further than the Triangulum Project's "Observer City" of Tianjin in China.

All one has to do is a quick web search and you'll find that Tianjin is home to the surveillance technology company Tiandy. Tiandy is one of China's biggest producers of CCTV cameras, AI and facial recognition software and is worth \$1.4 Billion. Amongst its many inventions the company developed name-and-shame surveillance systems in Tianjin that identifies jay walkers and displays their faces on street-side billboards. In an article published by Bloomberg, Elsa Kania, the adjunct senior fellow at the Center for a New American Security, a Washington-based think tank, wrote that: "The Chinese government's approach to leveraging data for purposes of social control and management could bolster the coercive capability of the state in ways that have quite troubling implications, including for the future of democratic governance worldwide. Many of the companies that are exporting AI applications, such as facial recognition, can be used for surveillance and thus enable repression."

While the Netherlands and China are seen as being at different ends of the spectrum when it comes to surveillance, this partnership somewhat discredits that assumption. What makes the link between Eindhoven and Tianjin so important is that it's the perfect example to show to those who still believe in the amoral utility of technology.

I https://www.bloomberg.com/news/articles/2019-02-21 /big-brother-billionaires-get-rich-as-china-watches-everyone The very aim of having Tianjin be part of the project is because it "presents significant opportunities for the industrial and private sector partners involved...to access and exploit the Chinese smart city market." So theoretically, what is tested on the people of Eindhoven without popular knowledge or consent could be used by the Chinese surveillance state to oppress and suppress its citizens.

So yes, we're lucky that Eindhoven is pushing for strict local data laws, but what happens when the technologies honed on an unassuming and anonymised public crosses borders? For now this is all speculation, there is no evidence that The Listener is, or ever will be, implemented in China. But it serves as an illustration for those who can't make the leap between technologies in Eindhoven and the desire for total control. When Footnotes ran workshops addressing these issues we often had the 'Oh but that would never happen here' reaction. This is something we cannot guarantee and the potential for misuse is implicit when there are direct links to the Chinese surveillance state.

We as citizens of smart cities must show solidarity. If we cannot put a stop to these surveillance start ups, those intent on the quantification and commodification of life, then we must write new laws concerning the weaponisation of technology, and the many definitions that can take. We must assume a responsibility for each other, because companies have no loyalties but to the market; it's just business after all.

B https://www.triangulum-project.eu/?page_id=2355





HA©KACITY A project by Louise Gholam

What can we learn from alternative types of democracy?

Demo-cratos is the Power to People. A way of defining this term could be the the sharing of free, direct and confrontational discourses. Its core resides in decision-making through the additions and influences of narratives. In that sense, souks or bazaars totally embody this mindset through their space, inhabitants and customs. Souks are self-sustained places ruled by their own authorities, and the voice plays an integral role in this. By gossiping all day, information is spread across the neighbourhood. People claim the opinions they stand for, conjointly defending a certain reputation. People confront, exchange and grow through authentic emotional investments.

The Hakawati (public storyteller) is a key actor in souks: translator of the voices heard on the streets he turns the latest gossips into tales advising people on their behavioural choices. His persona and recognised talent within the public sphere make him a figure that authorities listen to.

Hakawati comes from the Arabic verb "haka", meaning to tell, relate, report, give an account of; to imitate, copy; to resemble. A hakawati is someone who does all those things.



Plowcharts courtesy of Louise Gholam



Inspired by a souks' internal system, how can a tool give people the chance to reclaim their Democratic voice in the public space?

Ha©kacity is a radio programme to empower local people by allowing them to reclaim the city using their voices. By physically broadcasting and mapping the city through personal narratives and gossips, participants will act as public storytellers giving a crowdsourced database of emotional knowledge. The acts undermine the smart city and the question of the "recorded urban space". Ha©kacity is a platform to explore and present alternatives that can facilitate a more direct idea of democracy through one specific tool: the voice.

Democracy bases its core in the sharing of free, direct and confrontational discourses. The decision-making through the additions and influences of narratives. The souk/bazaar is a free market place found in the MENA (Middle-East, North Africa). They are open or closed spaces where you can find all kinds of goods from vegetables to furniture. They are self-sustained spaces that are ruled by their own authority (people living and working there), and have been the cradle of rebellions and revolutions for centuries.

The Souk Radio Trekker

The Souk Radio Trekker doesn't have the pretension to give an answer to the legal loopholes surrounding the notion of sound privacy and the consent of being recorded in our daily lives. But rather, it offers to trigger the discussion surrounding it. All along your dérive, please do tell us how you feel about the subject of the recorded city. Do you lack privacy? Do you fear you're being listened to? Do you think that there isn't enough confrontation with other voices and opinions?

Would you trade the comfortable situation of having frictionless spaces for ones where we could dare to be more antagonistic?

This project is a reaction and interaction with these controversial questions, the ones that don't have clear borders as the laws and reforms are in constant flux. The Souk Radio was imagined as an interrogation of the 2018 Google Street View Trekker backpack (a device that captures 360° panoramic images). The Trekker can be loaned from the company, allowing the wearer to gather data as they wander freely through the city. This is all facilitated through the design of the attractive device that "looks slightly less dorky than the previous iteration."



I https://www.theverge.com/2018/12/18/18147173/googlemaps-street-view-trekker The Trekker, for all intents and purposes, is a well marketed invitation for a more collective building of the smart city for the people, by the people: via a private company. As legit and honourable as this idea sounds, the Ha©kacity programme believes in a more critical approach to cities in order to co-create more inclusive public spaces.

Ha©kacity's aim is to put an emphasis on emotional data gathering from people to people, from peer to peer. Here were dare to say that gossip is not the end of information, but rather a way of extending it while sharpening a critical eye towards information harvesting.

But it's really up to you to join in, you can opt in or out; an option not usually afforded to people in a smart city. You can broadcast and expose your opinions and thoughts on local issues. What do you think about it? Can you tell the reputation of a space by only recording it? How does the equipment work? What will you be recording? Where are the microphones and what are they? With this tool you become visible and ahhrecognisable with this moving antenna. You will become a noticeable figure in the public sphere, just as the Hakawati is.

Of course, we acknowledge that rumours, gossip and anecdotes can also be wielded for destructive ends. Nonetheless, like with any other type of media, it is more about the way you handle the information than the factual



knowledge and overall truth. By focussing more on inaccurate, sensitive and interactive knowledge we hope to create curiosity amongst locals about their sense of place. But also and maybe most importantly, we want to create a revaluation of truth about the city we want and care about.

The Ha©kacity trekker will allow you to record a 360° soundscape focusing on your voice (mini mic placed near your mouth) contrasting with the overall sound of the streetscape (captured with a shotgun microphone): two perspectives on one space, a binaural experience for both you and your listeners! This tool and the subsequent radio programme was born from a collaboration of believing minds in the open criticism of a city and the awakening of democratic paroles in the public. Therefore we invite you to share your encounters with the strangers you'll meet on the way or come across as you will be dériving through the city.

A bit of legal context

Audio recording pre-GDPR (General Data Protection Regulation)

Prior to the GDPR, audio recording regulations varied widely. Germany, for example, is a two-party consent state, meaning call recording without the consent of both or, when applicable, more, participants is a criminal offence. In the U.K., the Data Protection Act of 1998 (DPA) classifies call recording as a form of data processing, as recorded conversations have the potential to capture personal information, including names, addresses, financial details, religious beliefs, and medical records. Under the DPA, individuals must be informed about the purpose of the recording. When it comes to consent, however, tacit consent is assumed under the DPA as long as individuals are informed about the recording and given the option to opt out. In this way, an audible notification informing the participants that the conversation is being recorded for training purposes satisfies the DPA requirement.

*The GDPR was adopted on 14 April 2016, and became enforceable beginning 25 May 2018. As the GDPR is a regulation, not a directive, it is directly binding and applicable, but does provide flexibility for certain aspects of the regulation to be adjusted by individual member states.

Audio recording under the GDPR (Implementation date: 25 May 2018)

The bar for valid consent has been raised much higher under the GDPR. Consents must be freely given, specific, informed, and unambiguous; tacit consent would no longer be enough. In addition, businesses recording conversations will be required to actively justify lawfulness of recording, by demonstrating the purpose fulfils one of the following Article 6 conditions:

_Participants have given consent to be recorded for one or more specific purposes; _Recording is necessary to fulfil a contract to which the participant in the call is a party; _Recording is necessary for fulfilling a legal obligation to which the recorder is subject; _Recording is necessary to protect the vital interests of one or more participants; _Recording is in the public interest or in the exercise of official authority vested in the recorder; Or, recording is in the legitimate interests of the recorder, unless those interests are overridden by the interests of the participants in the call which require protection of personal data. Organisations in certain industries will easily meet one of the conditions due to sector-specific regulations. For example, banks and financial institutions are required by law to record every one of their transactions. But those organisations that record conversations only for training and quality purposes will have a more difficult task, as they will need the participants' freely given, specific, informed, and unambiguous consent for the specific purpose of recording the conversation.

Post-Opera, Sensors and the City

An Interview with Curator Kris Dittel

Josh Plough: One of the main the sensors on the streets of Eindhoven is the microphone. But not just any old microphone, they've actually developed something they call a sound camera. So I'm interested in how our voice can then undermine the presence of such technologies in the urban environment and how we situate ourselves. In your exhibition you introduce the changing relationship between the human body and the voice by writing:

The human voice has historically been central to our psychological and social understanding of individuality and selfhood. Since having the right to vote means having a voice in society, the voice is also central to our definition of citizenship. Hence, the voice is intimately entwined with what counts as being 'human'.

But when our voice is captured and used against us a new dynamic is developed between the self and the city. I'm not quite sure how to position it and that's why I wanted to talk to you.

Kris Dittel: Yeah, well I'll start by talking a little bit about my research, and the show in particular because although Post-Opera wasn't focusing so much on architecture and urban space, there are actually several links, and several works which immediately come to mind. They have a lot to do with how we use our voices in public and what the restrictions and possibilities are. But before I go there, I'd like to introduce how it all unfolded and how I got to this research on the voice.

A couple of years ago I started a self-initiated research which I called Voice as Material. I looked into the material substance and the kind of performative potential of the human voice. Researching artists I sensed that there was a proliferation of works and practices creating artworks where the voice stood central. Some outcomes and traces of this interest were already present in the show The Economy is Spinning. In a later phase of this investigation of the human voice I met with musicologist and opera scholar Jelena Novak, PhD with whom we quickly realised that we were looking into similar issues from the perspective of our own disciplines, namely into the changing relationship between the voice and the body today. To one extent this change has to do with how technology influences the way we perceive the voice as such, and on the other hand how our categorisation or ontologies of voices are maybe also changing. Within this joint investigation my angle was quite influenced by the critical posthumanist discourse, and Rosi Braidotti's thought in particular, who talks about the question of what it means to be human today. Braidotti identifies the 'human' as a Eurocentric term which is still centred around the ideal of the Man as a universal representation of the human, which presupposes a dialectics between the self and the 'other' in a binary logic (who is included in this category and who is not).

So, my research was coming from this angle while looking at the human voice.

I was quite shocked when you told me about those microphones in Eindhoven but now when you say that they are able to map the individual, I wonder how that is possible legally.

J.P: Legally they're allowed to because you're anonymous when and if it decides to track you. They also have Mac-Readers which are switched off because of privacy laws.

K.D: Hearing about these microphones in relation to privacy laws, a print from the Post-Opera exhibition comes to mind. It wasn't really an artwork, but rather a historical reference, which we called a 'footnote'. This footnote was a print from Athanasius Kircher's influential lexicon Musurgia Universalis or Dictionary of Music and Musicians from 1650. The book describes Kircher's view on music, and documents instruments of the time, while also containing many speculative and fantastical ideas. The selected drawing in the exhibition is precisely about surveillance. It depicts a public square with people and a building with this huge internal funnel that captures the voices of the public and amplifies them. This spiral tube ends in a statue, which then 'speaks' these public secrets, allowing a person to eavesdrop on what is being said on the square.

J.P: One of the main problems that has been identified by the many people who research

At the time of publication Footnotes was informed that the microphones have been switched off but are sporadically switched on for testing. and write about these things is how the algorithms nudge or push us into normative behaviour. When I interviewed the guy behind the Living Labs initiative he starts using phrases and words like 'aggressive behaviour' and 'normal'. But what's aggression and how did they come to that definition? And it probably comes down to some guy, usually, at the local Technical University. The algorithms they use remind me of what Amazon implements in its smart speakers, so called sniffer algorithms. They listen for trigger words like 'prefer' or 'bought' and then capture and analyse the adjacent audio. This means they can better tailor adverts to you and predict your buying habits. So we could end up with a scenario like that where these algorithms listen and nudge us to act certain ways.

K.D: This data can also be used for pre-emptive policing in the future can't it?



Athanasius Kircher - Dictionary of Music and Musicians

J.P: Exactly, the Living Labs are working on developing algorithms that predict fights by up to five seconds before they happen. With all of these sensors I really wonder how our voice in these public spaces can become a critical tool.

K.D: Well, it goes back to the sole question of these algorithms, what kind of data they are being fed and if those data are representative and all encompassing. Often when people think of them they think they are a neutral tool. But of course it is being fed a certain kind of data and then based on that data it predicts something. During my research I was working on and playing around with artificial voices. Nowadays it's quite easily accessible to digitally recreate your own voice almost without any artificial effects, simply by prerecording a couple of sentences. Voice synthesising is at a stage where the result is almost impossible to distinguish between a human voice and a computer generated one.

It is possible to work around these surveillance systems, to a certain extent, so to answer your question, I wonder if some strange solution could be then to either use voice modification and/or use this artificially generated voice to speak in public; to kind of translate what you want to say into a more neutral tone, as an example.

J.P: It reminds me of the problems we're facing with these deep fakes that are starting to appear on YouTube. I've been doing this project for a year now and the more I get into it the more depressing it gets. Still, Eindhoven is actually pretty open and transparent when it comes to smart cities.

But I want to start a petition that forces all companies testing technologies on the public to sign a contract stating that they cannot then sell those things to companies, governments or businesses that could weaponise them.

K.D: I've had similar discussions with a friend of mine, an artist who has been doing research on pre-emptive policing which also is being tested in the Netherlands. I was arguing that although the Netherlands may have relatively strict rules on how these technologies can be used-apart from all the problematics surrounding data collecting and algorithmic predictions, which of course has to do with your history, where you were born, where you live and so on; which easily seeps into racial profiling –but, apart from all that, my point was what if then these technologies are implemented in, for instance the US where you have a prison industrial complex? I think indeed it's not just about locally ensuring that it's being used discreetly, whatever that means, but then also how you can prevent that it doesn't get in the wrong hands. I don't think there is any way, especially when these things are often developed in the initial phase at universities, or in collaboration with universities. At the end it will be a company that will be licensing these things.

J.P: When I talk to the guy behind the Living Lab he says "Oh but we have really strict local laws", but then you realise that companies don't and they can take their technologies and sell them to whoever they want. But that aside, with an exhibition like Post-Opera and your research, do you see the visual arts as fermenting possible alternatives to this kind

of surveillance state that we're all seemingly living under? I know there has been a lot of digital art and design that is critical and speculative but I'm always looking for action in projects, and how we can implement these things very quickly. So this idea of the artificial voice is very intriguing. Have you come across any artists that are working in the activist field as well?

K.D: Well to be honest, due to the time limitations of my research, within the exhibition these artificial voices from an activist perspective were not so directly present. The most obvious example of such practice could be Forensic Architecture who don't use artificial voices per say, but employ voice analysis and data analysis in order to find or cross-reference evidence. But artists working with artificial data and then somehow subverting its own limitations so to say, do not really come to my mind. I think that was also the reason why I stopped with my little performance lectures using my synthesised voice. Apart from providing some kind of visibility to this issue, for me it became a bit of a cul-de-sac spectacle.

J.P: I'm not so experienced with opera but it seems that emotions are exaggerated in some aspects of it. As I've already said, and maybe it's a reductive way of thinking, but I always feel this urgent necessity of building an alternative and so I guess I sometimes try and jump straight to finding a solution, and skip out a lot of the stuff in-between. But I wonder if maybe the subversiveness comes in when we start singing in public and we have to retrain our voices for this whole new way of existing in public space, if we even call it that anymore.

K.D: There are two works I want to tell you about, but I want to come back and quickly talk about the artificial recreation of the voice. Because what happened within this process of synthesising my voice is that I also learnt how to speak as my artificial, synthesised voice, which would be still quite flat and emotionless, yet uncannily similar to my regular speaking voice. It's usually making use of a text to speech technology, so you can add a question mark or punctuation to try and generate some emotion, but it's really, really flat. So I've noticed that I was unconsciously mimicking my artificially created voice, and the interesting thing with algorithms is that they become a kind of feedback loop: that we do influence the outcome but it then influences us, in this looping process.

So that was one point.

And talking about drama and emotions in opera there was another work in the show by artist Mercedes Azpilicueta and urbanist John Bingham-Hall, which is precisely taking opera as the historical genre where human subjectivity and drama was exaggerated and played out. They did several days of location scouting in Rotterdam, identifying places which had certain kinds of acoustic qualities, defined in rather broad terms. What would perhaps connect all these locations is that they were rather unusual spots for vocalisation. This meant that you would find a lot of noise there but it was not inviting to start singing along or let your voice be heard. Mercedes and John selected three of such places and created experimental scores, which were a sculptural, abstract translation of these vocal experiments in the spaces.

The work included a sculptural sound installation in the exhibition space and a performance where the scores were activated in public space. Mercedes and John worked with several choirs in Rotterdam on the creation of this piece and the semi-participatory performance, where people could join and explore these vocal exercises. The vocal experiments were always non-lingual, they would mimic voices or work with non-verbal sounds rather than a sort of singing along. Ultimately the piece, especially the performance, was an effective experience, encouraging participants and bystanders to let their voice fill and map urban space.

Maybe I'll quickly mention one last work by Jan Adriaans. He recorded in three football stadiums in Europe; in Poland, Netherlands and France. He, together with a composer, made a sound composition with these swarming sounds, when collective singing erupts without a leader/conductor or epicentre. Ultimately what was also really interesting about this work is that often these songs are very much tied to identity and nationality and express some kind of belonging to a place. But since they were joined into one swarming, the languages merged into one another, becoming this abstract entity.



<u>OMP 161.5</u> Eindhoven Footnotes: Tales from a Technocratic City

Published by: Onomatopee, 2019

ONOMATOPEE

<u>Editor:</u> Josh Plough

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Made possible thanks to the generous support of:

creative industries fund NL

Cultuur Ceindhoven

Provincie Noord-Brabant

People, Institutions and Movements involved so far: Aaron Garlick Alejandro Cerón Arthur Van De Poll Bas Thijs Ben van den Broek Bits of Freedom Callum Dean Christo Weijs Dario Sposini Design Academy

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Special Thanks to:

Yorit Kluitman for supplying additional graphic resources and elements for the initial visual identity of the project.

Everyone at the Heritage House in Eindhoven for the their time, generosity and willingness to experiment.

Everyone who turned up to the meetings and supported Footnotes with time and labour.

Rick Scholte of Sorama for his progressive approach to sensors in the city.

<u>Typefaces:</u> DonaldsansCODE, Nitti Grotesk



"E "Eindhoven lets you hear. Here we conduct a pilot with sound sensors for extra safety on Strijp-S"

Eindhoven Footnotes is a year long project that means to engage and disseminate research related to the presence of technology in our smart city.

This zine is the last of five publications exploring what it means to live in a city of the future. The topics covered while local, tie into the wider global debate surrounding big data and citizenship.

In this edition sound is used to understand the presence of microphones on our streets. Two case studies have been used to demonstrate the difference between amplification and capture in public space. Where do we collectively stand when our voices are seized and uploaded to the network?

