

# Underneath the Toxic Cloud

An ethnographic exploration of initiatives in the IJmond addressing pollution  
by Tata Steel

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## **Abstract**

This thesis is an ethnographic exploration of initiatives in the IJmond-region, the Netherlands, that engaged with industrial pollution caused by steel company Tata Steel. This exploration is based on three months of anthropological fieldwork in the IJmond, the region that surrounds Tata Steel IJmuiden. Through description of these initiatives' practices, such as documenting facts regarding this pollution, measuring or monitoring it, and organising events and protests regarding it, I analyse how people in these initiatives exercised a form of scientific citizenship. I do this by describing how these people gained expertise on Tata Steel's pollution, and how my interlocutors lost trust in Tata Steel and the government as a result of their manipulation and ignoring people's complaints. Finally, I analyse the role of time in these initiatives' actions against the pollution, describing how both Tata Steel and the initiatives utilised time to their advantage. Through this, I provide an account of how initiatives in the IJmond addressed Tata Steel's pollution, and what difficulties they faced while doing this.

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## Introduction

Driving into IJmuiden, on the road by the North Sea canal, it is impossible not to be struck by the unique view: looking across the water, you immediately catch sight of ‘Tata’, as people in the IJmond called the steel company owned by the Indian Tata Group. On this particular evening, the sun shone on the clouds of smoke blowing out of the large chimneys, slowly setting behind Tata Steel’s tall buildings and the wind turbines next to them. This factory has provided many people in the IJmond region with jobs for over a hundred years. But Tata Steel was a source of mixed feelings for residents of the IJmond. Windowsills were covered in a layer of black soot, and as the chemical smell reached their noses, my interlocutors often thought, ‘the wind is blowing from the wrong direction’, meaning from the direction of Tata Steel. These things were part of daily life in the IJmond. People wondered what the cost of Tata Steel’s presence in the region was, and they were not keen on letting this go on indefinitely. Organised in initiatives, concerned IJmond residents protested against the pollution Tata Steel imposed on them on a regular basis. This thesis is an ethnographic exploration of these initiatives’ practices surrounding Tata Steel’s pollution.

Industrial pollution is a worldwide problem. In the Netherlands, Tata Steel IJmuiden is one of the most polluting industries (RTL Nieuws 2021), exposing the surrounding residents to toxic chemicals. This has been going on for over a century, with the steel production site having existed in the IJmond region since 1918, albeit under different owners before becoming part of the Indian Tata Group in 2010. However, for a long time, IJmond residents did not worry about any kind of pollution the factory may be releasing into the environment (Kraan and Rozing 2023). Over time, this changed, as some people started attributing ‘nuisances’ to be an effect of Tata Steel, such as soot and smell, as well as instances of graphite raining down in Wijk aan Zee and turning snow black (Vuijk 2022). In 2023, the Dutch National Institute for Public Health and the Environment (RIVM) released a report that stated that Tata Steel released large amounts of particulate matter, polycyclic aromatic hydrocarbon (PAH), and metals such as lead into the surrounding environment, causing people in the IJmond region to have a significantly higher risk of developing lung cancer, and they pass away two and a half months earlier on average, compared to the average Dutch citizen (RIVM 2023). As a result of these developments, several people became active against Tata Steel’s pollution, creating and joining initiatives that engaged themselves with this pollution in order to make a case against Tata Steel. These initiatives did a variety of things, ranging from monitoring the

environment to organising protests. In this thesis, I seek to ethnographically answer the following research question: ‘How do people in the IJmond region, who engage in initiatives that address pollution produced by Tata Steel IJmuiden, exercise a form of scientific citizenship, and what contestations exist surrounding these initiatives?’

### **Scientific relevance**

Within anthropology, there has been much research on industrial pollution and local residents’ dealings with this pollution (e.g., Brown and Mikkelsen 1997; Checker 2005; Little 2014), and the specific case of Tata Steel IJmuiden has even been added to this in recent years through several master theses (Körver 2022; Roosen 2022; Van Dijk 2022). Within the topic of industrial pollution, anthropologists have done much research on citizens’ practices to monitor or measure this pollution (e.g., Booker 2023; Davies and Mah 2020; Kinchy et al. 2014; Matz et al 2017). There are several terms that are being used to describe this, such as ‘participatory research’, ‘amateur science’, ‘community-based research’, ‘citizen science’, and many more, which all roughly refer to the same thing: non-professional scientists, or members of the ‘general public’, doing scientific work (Strasser et al. 2019, 54). As several of the initiatives that were part of my research called themselves citizen science projects, this is the term I will use throughout the rest of this thesis.

Strasser et al. (2019) thus keep their description of citizen science relatively broad, proposing to distinguish between citizen science projects through five ‘epistemic practices’: sensing, or the monitoring of the environment in daily life through observations or apps; computing, referring the donating of computer CPU for digital analysis by scientists; analysing, which is the analysis and identification of data; self-reporting, when people report their health issues and illnesses online; and making, which refers to the production of knowledge, for example in laboratories (Strasser et al. 2019, 56-57). Heigl et al. (2019, 8091), however, described stricter standards for what qualifies as citizen science. They argued, for example, that citizen science projects had to have scientific standards, such as research questions or hypotheses that were being tested, and new knowledge or methods that were being created. Furthermore, there had to be added value to these projects for everyone in the collaboration, meaning the project leaders as well as citizen scientists themselves, and the data and results of these projects had to be openly accessible (Heigl et al. 2019, 8091).

While it may be difficult to strictly determine what exactly qualifies as citizen science or not, there seemed to be a general consensus on the fact that citizen science projects were often a result of the perception among citizens that there were shortcomings in some way, either in professional science in the specific topic (Strasser et al. 2019, 61) or in the degree to which the state protects citizens from environmental harm (Kinchy et al. 2014). Thus, in this thesis, I seek to add the concept of ‘scientific citizenship’ (Sternsdorff-Cisterna 2015) to these discussions of citizen science, and even to the initiatives that occupied themselves with the science behind Tata Steel’s pollution in general, without being citizen science initiatives themselves. Sternsdorff-Cisterna (2015) described scientific citizenship as an altered relationship between citizens and the state as a result of increased scientific knowledge within the citizen population. During my fieldwork, even people in the initiatives that were not necessarily citizen science projects increased their scientific knowledge through their practices. This increase in scientific literacy, according to Sternsdorff-Cisterna (2015), stemmed from a lack of trust in government and industry safety standards for radiation levels after the Fukushima nuclear disaster. As I will show in this thesis, many of my interlocutors indirectly expressed feeling that their relationship with the Dutch government had changed, too.

Furthermore, in this thesis, I engage with the concept of ‘slow violence’, which refers to cases of long-term violence such as climate change and pollution. According to Nixon (2011, 2), this happens incrementally, without being noticeable for an extended period of time, as the effects of this slow violence build gradually. Additionally, he argued that slow violence is “often difficult to source, oppose, and once set in motion, to reverse” (Nixon 2011, 7). In the case of Tata Steel, this slow violence was spread out over more than one century already. However, this description of slow violence is not agreed upon by all authors who engage with this concept. Davies (2022), for example, argues that slow violence is not ‘out of sight’ to everyone, as suggested by Nixon (2011), but instead explaining that victims of slow violence make this harm visible to themselves through ‘slow observations’. Davies argues that these slow observations produce a type of knowledge that is also ‘slow’, accrued over time, but often ignored by the polluting industries and governmental institutions (Davies 2022, 420-421). Furthermore, Ahmann (2018) argued that slow violence often can be, and is, responded to by its victims. She ethnographically shows how time can be manipulated in cases of pollution, through imitating slow violence against its perpetrators (incrementality), ensuring that polluters cannot continue their work (deferral), and the concentration of complaints and



action into specific events (concentration) (Ahmann 2018, 146). With the help of Ahmann's (2018) arguments on the manipulation of time, and the concept of slow violence, I argue that both the activists in initiatives and Tata Steel used time to their advantage in certain ways.

In bringing together the debates on citizen science and temporality into the case of Tata Steel IJmuiden, I provide insights into how initiatives in a densely populated country like the Netherlands engage with industrial pollution to achieve a healthier living environment, and thus exercise a form of scientific citizenship. By doing this, I provide a better understanding of the role of temporality in cases of activism against industrial pollution, and the wide range of difficulties and experiences that people in industrial areas encounter in cases of long-term industrial pollution.

### **Population and location**

The location of my research was the IJmond region, in the province of Noord-Holland, the Netherlands. As described, this region consists of three municipalities: Beverwijk, Heemskerk, and Velsen, which can be seen in Image 1 below. The Tata Steel terrain is spread out over these three municipalities,<sup>1</sup> thus making these municipalities the ones that most closely surround the factory. Furthermore, the three IJmond-municipalities were identified by the RIVM as having the worst health effects from the factory (RIVM 2023). For this reason, I decided to choose this region as the location for this fieldwork. Within this region, I spent time with individuals who engaged in initiatives that tried to address Tata Steel's pollution. These people felt like Tata Steel's presence significantly affected their lives, and they were worried about the chemicals, PAHs, and metals the factory was releasing into their local environment, and thus joined initiatives that they believed would help them achieve their goals for a healthier living environment. I observed and took part in activities of several of these initiatives, such as Hollandse Luchten, a citizen science project that monitored the air quality in the IJmond; the Dorpsraad Wijk aan Zee, a village council in the village closest to Tata Steel; and the Surfrider Foundation, a citizen science project consisting of surfers that monitored the sea water quality on several beaches in the Netherlands, including Wijk aan Zee. Furthermore, I worked closely with people that were active in organisations Greenpeace and FrisseWind, as well as with other concerned IJmond residents, to organise an event to

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<sup>1</sup> <https://www.tatasteelnederland.com/Over-ons/tata-steel-ijmuiden>, accessed on 11-06-2024.

protest against Tata Steel’s pollution. These people’s engagements with Tata Steel’s pollution provided me with the data used for this thesis.

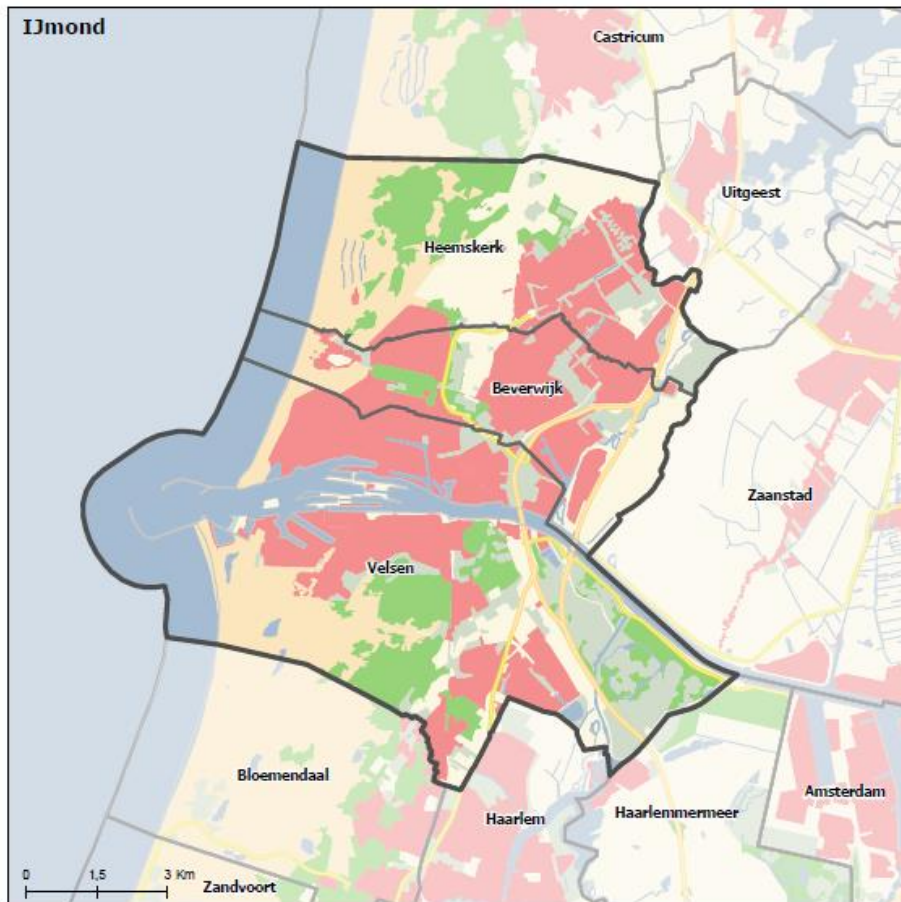


Image 1: Map of the IJmond-region and its three municipalities.

Source: [https://www.noord-holland.nl/Bestuur/Regionale\\_bestuurskracht/Regio\\_s/Regionale\\_bestuurskracht\\_IJmond](https://www.noord-holland.nl/Bestuur/Regionale_bestuurskracht/Regio_s/Regionale_bestuurskracht_IJmond)

## Methodology

For this research, which was conducted between February and April 2024, I relied on participant observation and semi-structured interviews to collect data. For participant observation, I attended meetings of the initiatives that I mentioned above, and participated in data collection to monitor air and water quality within Hollandse Luchten and the Surfrider Foundation. This included monthly meetings with the Dorpsraad, during which I took notes, and two meetings with the local measurement groups of Hollandse Luchten to determine what goals my interlocutors had for the project in this year. With the Surfrider Foundation, I joined one of my interlocutors in collecting a water sample once in Wijk aan Zee. Furthermore, I helped these initiatives with mobilising more IJmond residents to join their cause, assisted them in addressing the pollution by Tata Steel, and helped organising events.

This entailed weekly meetings in order to organise an event with local members of Greenpeace and FrisseWind, as well as other IJmond residents. In addition to this, I have conducted semi-structured interviews with eight people from the initiatives that were part of my research. For these interviews, I focused on the most active and prominent people from these groups, with whom I established rapport over the course of my fieldwork and provided detailed insights into the initiatives' practices. The questions asked in the interviews were adapted depending on the initiative my interlocutor participated in and their role within this initiative. I also conducted one group interview with three people from Hollandse Luchten at once, which allowed me to experience in detail how my interlocutors discussed Tata Steel and its pollution with each other. The entire research project was conducted in Dutch; therefore, all quotes and sentiments in this thesis have been translated to English by me.

### **Ethics and positionality**

My interest in this topic was sparked by the fact that I grew up in the IJmond myself, 'underneath Tata Steel's smoke', as people in the IJmond said. This positionality provided me with a deeper understanding of the situation and people's feelings towards Tata Steel, and mentioning my personal history with the region often made people open up to me more. Nonetheless, I have had to be careful to not let my research be guided by my own ideas and experiences with living in the IJmond. I have kept this in mind over the course of the three months during which the research was conducted and have reflected upon this, both while in the field and after returning from the field. The fact that I found initiatives engaging with Tata Steel's pollution of which I had never known they existed, helped me approach this fieldwork with an open mind, thus letting me discover a whole new side to the region I grew up in.

Although most of my interlocutors expressed that they were open about their activism and were not afraid of their statements being tied to their name, all names used in this thesis have been anonymised in order to ensure their privacy and safety. The only exception to this is Marlijn, whose poetry I have used in this thesis with her permission. She has explicitly consented to the use of her real name in this thesis. I have used her real name for this, as I wanted to ensure she gets the right credit for this. Her poetry is also freely available on her website.<sup>2</sup>

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<sup>2</sup> <https://www.mar-lines.com/>, accessed on 14-06-2024.

## **Structure**

This thesis has been divided into three chapters, each with a different main topic. In the first chapter of this thesis, I describe the practices of each citizen initiative that was part of my research. Through this description, I explain how my interlocutors engaged with knowledge in their initiatives, and how the expertise they gained as a result helped them to make a case against Tata Steel's pollution. Then, in the second chapter, I describe people's distrust, which led them to participate in these initiatives, and how this was a result of lies and gaslighting by Tata Steel and the government. Furthermore, I analyse how my interlocutors felt like their concerns were being ignored. In chapter 3, I move on to the different ways in which time played a role in the case of Tata Steel IJmuiden, in the eyes of my interlocutors. I show how this usage of time was employed, first by Tata Steel, and then by the initiatives themselves. Thus, through these three chapters, I show how my interlocutors became experts through citizen science while they faced lies, manipulation, and struggled with time. Together, these chapters illustrate the essence of what my interlocutors' citizenship looked like, marked by their everyday dealings with Tata Steel. In the conclusion, I will summarise this and answer my research question.

## 1 – Citizen Expertise

Cycling into Wijk aan Zee on a March morning, after a tough 45-minute bicycle ride, there were a few things I noticed. First, I saw tall chimneys stick out above the treeline, revealing the presence of the neighbouring steel factory, Tata Steel IJmuiden. Second, I noticed an intense, chemical smell lingering in the air in the small beach-side village. This smell was another way in which I noticed Tata Steel’s looming presence. The sky was full of clouds, and there were some strong gusts of wind, adding to the gloomy picture. However, despite the weather, I was on my way to meet Sara, a woman in her late twenties who lived in Wijk aan Zee. She was very involved in several initiatives to fight for a healthier living environment, which was being ruined by Tata Steel’s pollution. We met at the beach in Wijk aan Zee, with a specific mission: we were going to take a plunge in the cold North Sea, to collect a water sample for the Surfrider Foundation, an organisation of surfers that measures the water quality on several beaches in the Netherlands. Having never even taken a plunge in the North Sea outside of the summer months, I was terrified. It was windy, cloudy, and we were going to do this in our bathing suits. We had to go quite deep into the water, though, to ensure that as little sand as possible entered the bottle. The water was ice-cold: within less than a minute, I no longer had any feeling in my feet, and I gasped over and over again from the shock of the cold water. However, being coached by Sara, who had done this multiple times before as a surfer, I kept going further into the sea and taking deep breaths, and little by little it stopped being so cold. The sun broke through the clouds, and Sara and I cheered in unison as we filled a large bottle with sea water. “You’re such a trouper for coming along with me like this!” Sara exclaimed. Shivering, we left the water to transfer our sample into smaller bottles for testing.

Moments such as these enabled me to gain a variety of insights into how my interlocutors engaged in different practices surrounding the pollution by Tata Steel. From active forms of measuring like Sara did for the Surfrider Foundation, to more passive forms of measurement, or even simply gaining knowledge about Tata Steel’s pollution by consuming information about it: my interlocutors used these practices to address pollution in their environment and its effects on their health through initiatives, and they each had their own ways of doing this. But what did they do with what they learned through these initiatives, and how did this help them in their case against Tata Steel? In this chapter, I analyse how my interlocutors gained a certain expertise through the initiatives they participated in. To do this, I first describe how

the initiatives I looked into during my fieldwork could be differentiated by their practices surrounding knowledge when I was in the IJmond. Through this, I aim to show how these initiatives made significant impacts or not on Tata Steel's pollution from the point of view of my interlocutors. Then, I analyse how these engagements with knowledge helped them in their addressing of Tata Steel's pollution. In this way, I provide an insight into how, during my fieldwork in the IJmond, my interlocutors participated in initiatives to fight against Tata Steel's pollution.

### **Different engagements with knowledge**

There was a large number of initiatives in the IJmond region that sought to address the pollution by Tata Steel and demand a healthier living environment. During my fieldwork, I noticed that there were different ways in which initiatives engaged themselves with the pollution by Tata Steel. These different ways of engagement, which I will describe in this section, are not meant to classify different types of initiatives, but I will describe them through these different forms of engagement to facilitate my analysis of their practices. Additionally, it is important to note that these initiatives' ways of engaging with Tata Steel's pollution certainly were not completely distinct and had points where they overlapped.

On the one hand, I encountered initiatives that mostly occupied themselves with reading, analysing, and documenting already existing data, and occasionally planning events to spread awareness or mobilise people, such as the Dorpsraad Wijk aan Zee, as well as a mobilisation event 'Together for Clean Air', which I helped organise with FrisseWind and Greenpeace. Hence, these initiatives were not engaged in producing new data when it came to Tata Steel's pollution. On the other hand, there was another form of engaging with and addressing pollution in the IJmond, which were initiatives that created their own data, or specifically, citizen science projects. Two of the initiatives in my fieldwork produced their own knowledge, and also called themselves citizen science projects: Hollandse Luchten and the Surfrider Foundation. However, what stood out to me is that despite the fact that most these initiatives had existed for several years already at the time that I was there, many of my interlocutors suggested that not a lot, or enough, had happened to reduce the pollution by Tata Steel. Furthermore, most of the initiatives had a broader focus than simply Tata Steel. Through discussing the groups that were the subject of my fieldwork per their respective

form of engagement, I will analyse how their practices made my interlocutors feel like they were making an impact on reducing the pollution with their actions (or not).

### Using existing knowledge

Out of all the initiatives in the IJmond, most used existing knowledge and data to become more knowledgeable about Tata Steel's pollution, in order to improve their local environment. Although both forms of engagement required a significant amount of time from the initiatives' participants, which I will discuss in more detail in chapter 3, the initiatives that used existing knowledge typically were able to attract a wider variety of people, because people did not feel like they needed any pre-existing scientific knowledge for this. The Dorpsraad Wijk aan Zee was an example of this: the Dorpsraad, which literally translates to village council, consisted of a group of twelve volunteers with different areas of expertise. This organisation looked into all issues and important topics within the village of Wijk aan Zee, split into three 'work groups': Vital Village, Health and Environment, and Spatial Planning. Through their work, the Dorpsraad could address issues within the village to the municipality they belonged to, Beverwijk, if necessary. Some of the members did work for the Dorpsraad while also having a full-time job; others used the free time they gained by being pensioned to work for the village council. Lucas, for example, was a man in his sixties who worked as a pilot for a commercial airline, and had been a member of the Dorpsraad for sixteen years already. As a member of the work group Spatial Planning, he explained that the council concerned itself with many other things than Tata Steel as well; however, the steel factory had now become one of their most important topics, even within his work group. Tata Steel was a topic that permeated through many aspects of their lives, with its presence always looming over their home village of Wijk aan Zee.

The village council held monthly meetings, every second Wednesday of the month. During these meetings, there was always a very open and friendly atmosphere. A large amount of people was welcome to watch the meetings and ask questions; during all of the meetings I attended, there were at least eight other guests at the meeting. This did not distract them from discussing a wide variety of topics during every meeting, however. Multiple times, members told me that the meetings I attended did not go into the topic of Tata Steel very much. Considering almost half of every meeting was spent talking about the factory, this made me wonder at what point members would say they talked about Tata Steel a lot. Lucas told me that his work for the Dorpsraad, as well as that of his colleagues, consisted of activities like

reading official documents, such as the details of Tata Steel's permits, attending municipal or provincial meetings on topics that concerned the village of Wijk aan Zee, and giving official statements on behalf of their organisation in politics or for news reports, for example.

Through these activities, the Dorpsraad Wijk aan Zee gained the knowledge and power to become one of the key players in addressing Tata Steel's pollution. However, their main course of action was to address the Dutch national government and Tata Steel to demand change. Although Tata Steel, according to my interlocutors, had said numerous times that they were taking significant steps to become more sustainable and safer, my interlocutors did not notice this much. They thus often felt like their efforts did not have much effect yet. Lucas, for example, told me that the Dorpsraad's mission to demand a completely 'green' Tata Steel would take a long time to reach, and their efforts would not show in practice soon. Nonetheless, there was one thing they did reach more quickly: through their public statements on their experiences living near Tata Steel, the Dorpsraad Wijk aan Zee became a voice for other concerned IJmond residents.

These voices were combined when several initiatives organised a mobilisation event together: a walk 'Together for Clean Air' (*Samen voor Schone Lucht*), with the route of this walk going from the port area in IJmuiden to the Tata Steel-terrain at the other side of the North Sea canal. This event was organised primarily by Greenpeace, in collaboration with the Surfrider Foundation, FrisseWind, Gezondheid op 1, and BODE, of which the latter three are all local organisations set up to protest against the pollution by Tata Steel. The main goal of this event was to give a voice to all concerned residents and local initiatives that concerned themselves with Tata Steel, including the Dorpsraad Wijk aan Zee. With the help of people working for FrisseWind and Greenpeace, I got involved in organising this walk, and became a part of the 'core team' with three other women: Sara, Julia, and Marlijn. Sara, who I also took the cold plunge in the North Sea with, had lived in Wijk aan Zee her whole life, and she was in charge of organising this walk for Greenpeace. Julia, also in her twenties, did not live in the IJmond, but was also very active in the Tata Steel case and worked for FrisseWind. Marlijn lived in Heemskerk and did not have a job related to the environment, but she reached out to Greenpeace to ask if she could help organising this walk after the organisation asked for volunteers. By including several people who lived in the IJmond in the organisation of the walk, Greenpeace's aim was to make this a walk 'by local residents, for local residents,' as Sara often repeated.



The four of us worked together on the organisation of this walk for a little over two months, with weekly meetings on Monday night. During these meetings, we discussed a variety of things, including how to mobilise local residents, the practicalities surrounding the walk such as the weather and route, and which other local organisations and initiatives to invite: the walk was really meant to attract people from the IJmond itself. During these meetings, which altered between being held online or meeting at a local café, there was a lot of space for everyone to pitch their ideas, and over time, we became more comfortable with each other. By combining the knowledge from all of the initiatives that helped organise this event, my interlocutors hoped to spread awareness about the situation. This manifested itself in a stage at the ending point of the walk, where several organisations were invited to give a speech. My fellow core team members, Sara, Julia, and Marlijn, hoped that as a result of this, participants of the walk could look at a bad situation in a positive, hopeful way. Furthermore, they hoped that it would encourage them to become active in this situation, “to turn their worries into action,” as Marlijn said during one of the meetings. Julia explained that this was important for them because gaining more support for their goal of a healthier living environment would help them reach this more easily, as they would be able to send a stronger message to Dutch politicians and Tata Steel. Thus, while these initiatives that used existing knowledge had a clear mission, they strongly expressed that they needed a large amount of support and time to be able to actually accomplish something, slowing the impact they were making in the short term.

### Producing knowledge

The initiatives described above did not produce their own kinds of knowledge, but simply utilised openly accessible data to make a case against Tata Steel. The initiatives I will describe below used this existing and openly accessible data as well, for example research on the pollution by Tata Steel by the RIVM. However, in addition to this, they enabled citizens in the IJmond that were concerned with Tata Steel’s pollution to collect their own data in a citizen science project, and work together with scientists to interpret the collected data.

Hollandse Luchten was such a citizen science project, set up as a cooperation between the province Noord-Holland and research lab Waag, with help from the RIVM and research organisation TNO. Through this project, my interlocutors were able to monitor the air quality in their local environment with the help of a SODAQ air sensor, which was lent to participants for data collection by Hollandse Luchten. This sensor measured the amount of

particulate matter, or the amount of solid or liquid matter in the air. Vincent, an elderly man who participated in Hollandse Luchten since the start of the project in 2018, explained how this works: when a particle passed by the sensor's lens, it would recognise this as particulate matter. This particulate matter was not always necessarily something polluting; high levels of sea salt in the air, blowing in from the neighbouring North Sea, also counted as particulate matter. The SODAQ air sensor measured particulate matter (PM) with several particle sizes, including PM<sub>1</sub> and PM<sub>10</sub>, with its main focus being PM<sub>2,5</sub>. Levels of particulate matter were measured every five minutes, after which the data was uploaded to a digital database and displayed in a graph on the Hollandse Luchten website, showing the average data per hour.<sup>3</sup> This data was also shared with the RIVM and TNO for analysis, in addition to these companies' own data. My interlocutors often hung this sensor, looking like a small blue-grey box with a LED light to show that it was on, in their garden, for example on the side of the roof of their shed. This project was started on the basis of citizens' interest in the effects of Tata Steel's pollution. However, the project's focus was broader than Tata Steel only, because as Vincent told me, it was not possible to attribute high levels of particulate matter to one specific source. Nonetheless, many people that participated in Hollandse Luchten did use the data they collected to make conclusions about Tata Steel's pollution.

One of my interlocutors, Stefan, had such a SODAQ air sensor in his garden, attached to the wall of his shed. Stefan was a pensioned man who had worked at Tata Steel for many years, and had lived in IJmuiden for over 50 years. He used the Hollandse Luchten data for unexpected reasons: Stefan did agree that Tata Steel should have been taking steps to become more sustainable, but he felt like the factory was often made out to be worse than it actually was. He thus wanted to prove that Tata Steel was not the 'big bad guy', as he said, but that the high levels of particulate matter were caused by other polluters. He did this by making comparisons between different sensors across the IJmond, looking for peaks in particulate matter levels in his own sensor and then checking whether he could see the same peak in the measurements made by other sensors in the IJmond. He concluded that often, multiple sensors in the IJmond displayed peaks during the same hour, regardless of if it was north, south, east, or west of Tata Steel. For Stefan, this was enough proof that these peaks could not be a result of Tata Steel's pollution. Despite this, he did recognise that the SODAQ air sensors were only able to measure particulate matter, and did not measure other harmful

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<sup>3</sup> <https://hollandse-luchten.org/kaart/>, accessed on 20-05-2024.

substances the steel factory may have released into the region, such as lead or PAHs. He could thus not make any actual conclusions on how Tata Steel was possibly affecting his local environment from the Hollandse Luchten data, and felt frustrated with how little he could do with this data.

Where Hollandse Luchten collected data on air quality through particulate matter, the Surfrider Foundation collected data on the quality of sea water. The Surfrider Foundation was an organisation of surfers that collected sea water samples at several beaches in the Netherlands in order to test what kinds of harmful chemicals or bacteria, if any, were in the water. This citizen science project was not specifically concerned with Tata Steel or the IJmond, but one of the sampling locations was Wijk aan Zee, allowing for a comparison of the type of pollution present in the sea near Tata Steel compared to other locations in the Netherlands. Additionally, Sara did participate in this project because of her concerns regarding Tata Steel's pollution. As described at the start of this chapter, Sara collected a water sample from the beach in Wijk aan Zee, regardless of the season and weather, every month. She did this because she was concerned about her health while surfing in her home village of Wijk aan Zee. To measure the water quality, she first filled a large water bottle with sea water, and then transferred this water into smaller bottles. These water samples were then sent to a laboratory to be tested for several bacteria and harmful chemicals.

Sara was by far the most active person in these kinds of initiatives that I met during my fieldwork, and she was also one of the youngest. She told me that she, as a resident of Wijk aan Zee, noticed the effects of the factory every day, which were very worrying to her: the bad smells, the noise, the soot in her windowsills, a pressing feeling on her chest. This was why she thought it was important to be so vocal about Tata Steel's pollution and be active in all of these initiatives and events, because not doing anything would not change anything. With this, Sara wanted to spread awareness with the help of all the initiatives she participated in, and motivate other local residents to join in on the action too. With more support, she hoped that she, and the other people that were active in initiatives, would be able to demand that Tata Steel either became completely sustainable or would close permanently, because the factory's pollution was creating an environment that was dangerous to live in. Davies and Mah (2020, 290) explained that spreading awareness has worked in other cases of industrial pollution: increasing awareness on the details of the pollution and the scientific knowledge collected by initiatives creates a stronger debate on the issues, making it a more prominent

point on the political agenda. Although the Surfrider Foundation had not yet had a large launch campaign of the results from their monthly measurements, Sara hoped this project would help her reach her goal too.

The initiatives described above were some of the largest and most active initiatives in the IJmond region that concerned themselves with Tata Steel, and my interlocutors participated in one or multiple of these initiatives. Kinchy et al. (2014) discuss the importance of participatory environmental monitoring (PEM), or the monitoring of the environment by non-scientists, in polluted areas in the United States. These PEM projects, which are similar to the initiatives I described in the IJmond, were one of the only ways in which citizens could gain insights and knowledge of invisible threats in their environment (Kinchy et al. 2014, 263). This accumulation of knowledge through initiatives was important for my interlocutors in the IJmond, too: it helped them to make a case against the pollution by Tata Steel. I will analyse this in more detail in the next section.

### **Becoming an ‘expert’**

For several of my interlocutors, the initiatives they participated in became an important part of their lives. This was partially due to the significant amount of time these initiatives took up in their lives, which I will describe more in chapter 3. However, it was also due to the fact that the knowledge they compiled enabled them to stand stronger against Tata Steel, because they knew what they were talking about in discussions regarding the factory’s pollution. I learned about this thanks to Pauline, who led all of Hollandse Luchten’s meetings in the IJmond. Pauline lived in Wijk aan Zee herself, and had worked for Hollandse Luchten for two years thus far. She explained that this increased knowledge about the situation enabled people to participate in discussions on the same or similar level as professionals on the case of Tata Steel’s pollution, giving them more power to fight for their own living situation. For this, my interlocutors needed background knowledge on the chemistry and technique behind the production of steel, too. Over time, my interlocutors had become ‘experts’ on the case through the collection of knowledge and their experience of living near Tata Steel.

This expertise could have been a result of citizen science, like for my interlocutors that participated in Hollandse Luchten. However, it could also be a result of other forms of engagement with knowledge too, according to Krick (2021, 998-999), such as through local

knowledge, or service user involvement, which is when users of a certain service are asked to help shape any improvements for the services they use. She explains that an ‘expert’ is seen as someone that is qualified to make claims on a certain topic or issue on the basis of extensive knowledge, and to produce this knowledge (Krick 2021, 1004). The members of the Dorpsraad Wijk aan Zee were thus clearly deemed to be experts, being asked numerous times to make a statement for news reports. They were able to do this because their knowledge possessed three qualities, that Krick (2021) explained to be necessary for expertise to be seen as reliable: it was experience-based, ‘non-ubiquitous’, by which she means knowledge that is not ‘common sense’, and it was non-idiosyncratic, meaning that it is not specific to only one person, but instead based on people’s collective experiences (Krick 2021, 1005-1006). Furthermore, Tesh (1999, 45) explained that citizen expertise often added valuable knowledge on a specific issue, because it was experience-based knowledge that professional scientists were not always able to encounter.

Stefan, for example, explained to me how he slowly became an expert on air quality in the IJmond. He told me that he heard certain things in the news, such as that the IJmond was “being covered in particulate matter.” He had heard of particulate matter before, but he did not know much about it yet. This made him worry, and think about how much of that particulate matter was coming his way. Joining Hollandse Luchten taught him a lot about particulate matter, such as that people breathe it in, having it settle in their lungs. Although Hollandse Luchten was only able to measure particulate matter levels, Stefan also learned about ultrafine particulate matter, which permeates even further into the body. With a somewhat sad smile, he said: “And, well, luckily, what Tata Steel releases is primarily particulate matter, so not the ultrafine kind.” Nonetheless, he thought it was a wonderful thing that Hollandse Luchten taught him so much about Tata Steel’s pollution, and that the project showed him in what ways he could influence the Tata Steel case. This was especially the case during the initiative’s meetings, he said, as often, RIVM experts were invited to help provide insights into the data collected by Hollandse Luchten. In this way, Stefan felt like he was slowly becoming an expert on what Tata Steel’s pollution entailed, which also enabled him to try and draw conclusions from the data he saw in the Hollandse Luchten graphs, as described in the previous section.

Other members of Hollandse Luchten did similar things with the Hollandse Luchten data as Stefan. Peter, for example, another pensioned ex-Tata Steel employee, explained that he

checked the graphs on the Hollandse Luchten website every night to check for peaks. Whenever he found one of these peaks, he tried to look for a source that could have caused it. However, this could only get as far as an estimate, or a guess; Hollandse Luchten explicitly stated that its data could not be used to link high levels of particulate matter to specific sources. Nonetheless, Peter attempted to look for a source by looking at the direction the wind was coming from at the time of a peak as well, like Stefan, but he only looked at the peaks from his own sensor first. Then, he looked for a second sensor that was positioned in the direction the wind blew at that time, and checked if he could find the same peak there and if the time difference matched the wind speed. Peter explained that he logged this in a table, and then tried to guess what kinds of things could have been the source, such as rush hour at nearby roads, or a boat going through the North Sea Canal. With a bit of an awkward laugh, he said that he had not been able to see the effects of Tata Steel's pollution clearly yet, because the direction the wind was coming from did not allow him to assess this with the data: his house was east of Tata Steel, and winds would often blow from northwestern or southwestern direction, but barely ever directly from the west. However, continuing to participate in the citizen science project was important to him, as the combination of the data and the meetings enabled him to learn more about his local environment and Tata Steel's pollution. Here, we can see what Kinchy et al. (2014, 263) meant with PEM being one of the only ways for people to monitor 'invisible threats': by participating in Hollandse Luchten, a citizen initiative, Peter gained a deeper understanding of the subject. This enabled him to voice his experiences and stories on how Tata Steel's pollution affected him and his colleagues while he worked there, which occasionally even reached regional newspapers. Here, again, we can see how my interlocutors were deemed experts because of the type of experience-based knowledge they had on the pollution by Tata Steel (Krick 2021).

As I explained earlier, the Dorpsraad Wijk aan Zee also were deemed experts on the Tata Steel-case, and they felt like experts too. Lucas explained that a few people in the council have become very good at reading through official documents on Tata Steel, such as permits, archival documents, and more. "They've sort of become experts now," Lucas said. Sometimes, however, this went even further than simply knowing a lot about the case. During meetings with the government, members of the village council started to notice that sometimes, they had more knowledge about the case than the government officials. Sara told me this as well: she explained that often, citizens themselves knew more about the contents of official documents and facts about the case than, for example, the OD NZKG. In this, Sara

really recognised the power that initiatives have in this situation, by giving people knowledge that helps them voice their concerns. In a short time, she said, concerned citizens had been able to make significant progress already because of this, by making Tata Steel's pollution a more prominent topic for discussion in Dutch politics and media. The 'professional' research that resulted from this in turn provided my interlocutors with more knowledge on the topic, further helping their cause, Sara explained.

All the knowledge my interlocutors gathered on Tata Steel in the IJmond thus granted them a special kind of expertise, strengthened by their own experiences of living near the factory. In some cases, they even felt that they knew more than the government officials they would meet for discussions about Tata Steel's future. As Sara explained, she felt a certain power in the unity that initiatives in the IJmond created. Together, she said, citizens could reach a lot more than they ever could by themselves. She expressed a series of positive feelings as a result of this: hope, power, and even empowerment. Davies and Mah (2020, 268) explain that citizen science, or the production of data by citizens, is commonly tied to feelings of empowerment within these citizens. However, as can be seen in the IJmond case, this was not only the case for the citizen science projects: simply advocating for a healthier living environment, against Tata Steel's pollution, in a group of people was what made Sara feel empowered and hopeful. Similar feelings were echoed by my other interlocutors; together, in these initiatives, they felt like they had a chance in reaching their goal of pushing Tata Steel to become more sustainable and healthier.

My interlocutors' participation in their initiatives was thus often a positive factor in their lives. They gained significant expertise on the workings of the steel factory and its pollution, and through the initiatives they engaged in, they found like-minded people, making them feel empowered. Organised in groups, my interlocutors were able to reach much more than by themselves. However, they did not join simply because they thought it was fun; they joined because they felt like the government would not protect them from the harm caused by Tata Steel. This, I argue, is a form of scientific citizenship in the IJmond. Sternsdorff-Cisterna (2015, 456) described this as an altered relationship between citizens and the state as a result of citizens' increased scientific knowledge. He analysed this form of citizenship in Fukushima, Japan, after the Fukushima nuclear disaster in 2011, where people sought to ensure food safety by monitoring radiation levels themselves. This monitoring was a result of a decrease in trust in what the government deemed safe levels of radiation. We can also see

this in the IJmond; as my interlocutors lost trust in the Dutch government, both on national as well as local levels, and Tata Steel to keep citizens safe, they felt the need to engage with initiatives to manage and monitor the pollution by the factory. My interlocutors pointed out many ways in which both Tata Steel and the government were causing people to lose trust in them because of their actions. This will be the topic of the next chapter.



## 2 – Lies, ignorance, and manipulation

On a cloudy, rainy Saturday morning, I woke up early to go on one of Tata Steel's so-called 'neighbour tours', a tour of the Dutch production site's terrain and a look inside of one of their factories. Clad in a helmet, safety goggles, and a coat with the company's logo, I entered a bus, together with a group of other people that signed up for the tour. Driving through the industrial terrain, the view from the bus was almost dystopian, coloured like a greyscale film: large clouds of smoke rose up into the already cloudy sky, engulfing the factory's tall chimneys, as raindrops fell into large puddles of water next to the road. This was a stark contrast to the talk provided by Tata Steel's employees: with great enthusiasm, they explained what the functions of all the factories on their terrain was in the steel production process. "And a lot of what we use here gets reused, either by us or by different companies around our factory. So we're being more sustainable than people think!" one of them exclaimed while we drove by a particularly smelly part of the factory: the infamous Kooksgasfabriek 2, which was said to be the most polluting part of the factory. The tour ended with a promotional speech for their Tata Steel Academy, asking anyone attending the tour if they had children or cousins interested in working there. On the way home, I even spotted several advertisements from the factory, with the chemical smell still lingering in my nose.

During the 106 years that this steel factory has existed in the region, existing under different companies before finally becoming a part of Tata Steel, the factory has continuously done its utmost best to be a positive influence in the IJmond region, and to convince local residents of this (Kraan and Rozing 2023). However, as time went on, more and more people raised concerns about the factory's pollution, due to things like soot in windowsills, bad smells near the factory, and snow covered in a layer of graphite, turning it grey. Research into these significant nuisances revealed that Tata Steel continued several harmful practices despite knowing about their severity, even after they were forbidden from doing so (Vuijk 2022). As a result, residents did not feel like their concerns are heard, neither by Tata Steel nor the government, or like they could trust the 'official numbers' released by Tata Steel itself.

For several of my interlocutors, as well as other IJmond residents, this was one of several reasons to take matters into their own hands in the form of initiatives or citizen science, as explained in the previous chapter. One of my interlocutors, Sara, told me that she knew many people whose parents passed away from cancer at a relatively young age, while their children

were still in primary school: off the top of her head, she could name ten people right away. To her, this was clearly tied to Tata Steel's pollution of the region. "We just see that the government does not protect us and our health," she said. My interlocutors believed that they could not trust the government to take care of them, and that they should not trust in Tata Steel's sustainability plans, because they saw a variety of ways in which they were being lied to and manipulated, or information was being withheld from them. Furthermore, they were occasionally subject to gaslighting, which is a psychological manipulation tactic that makes people doubt their own reality or sanity. This has been described in other cases of industrial pollution too: Grandia (2020) introduced the concept of 'toxic gaslighting', by which she means that powerful actors, including polluting industry itself, may enact a form of gaslighting upon people protesting the pollution, for example about the source of the pollution.

In this chapter, I will analyse in what ways my interlocutors experienced lying, manipulation, and gaslighting by Tata Steel. To do this, I will describe how people who participated in these initiatives knew and felt that they were being lied to or manipulated, and the role that slow violence played in this. Then, I will analyse how Tata Steel and the government ignored residents' concerns through my interlocutors' experiences. Through this, I will explore how this manipulation and ignorance has altered my interlocutors' relationship with the government. Together, this shows how Tata Steel made my interlocutors feel like their concerns were being invalidated.

### **Tata Steel's true face**

During my time in the IJmond, people's feelings of distrust and sometimes even betrayal were clear throughout all the conversations I had with my interlocutors. Where decades ago, people might have thought that Tata Steel was a great company that took care of its employees and the region, my interlocutors had come to the realisation that they were being lied to, manipulated, and gaslit by the company. There are many tactics through which people can be gaslit, including denial or misrepresentation of facts, withholding information, projecting, forgetting, and shifting of blame. In this section, I describe how my interlocutors felt like several of these tactics were being deployed by Tata Steel and the government.

Lucas told me that when he moved to Wijk aan Zee twenty-six years ago, he immediately questioned what the effects were of having such a large steel factory nearby. However, other people in the village told him that as far as they knew, the only effects were some soot and an occasional bad smell. As a result, he thought that it would not be a problem, and that the Netherlands, as a first world country, could ensure that it was all safe and arranged properly (*goed geregeld*). By this, Lucas meant that factories in wealthy first world countries such as the Netherlands should be completely safe, because the country has the (economic) ability to ensure that the factory follows safety rules. But as time went on, he discovered that this was not the case at all, through news reports of higher cancer rates in the IJmond. This led him to join the Dorpsraad Wijk aan Zee in order to find a way to do something about this big factory that was, metaphorically speaking, in his backyard. “At this point I’m thinking, we have things on our plate which never should have been there,” he told me after a village council meeting. As a result of the council’s increased expertise on the topic of Tata Steel, they keep discovering more and more ‘truths’ about Tata Steel:

Lucas: There’s always more going on than we think.

Nèri: In what way?

Lucas: After a while, you start to see Tata Steel’s true face. They have all these positive messages, but they never keep their promises. So, yeah, as a local resident, you start to see that they have absolutely no good will to do the right thing, they knowingly keep doing bad things.

He explained that in 2008, they were promised that the most polluting part of the Dutch production site in Velsen-Noord, Kooksgasfabriek 2 (KGF 2), one of the cokes-gas factories, would close within ten years. However, this promise was never documented or mentioned again, and it thus never happened. According to Lucas, Tata Steel even seemed to pretend that this promise was never made, making my interlocutors question whether they misunderstood what was said. Years later, Lucas said, the company ‘dusted off’ the same promise and used it again: Tata Steel announced that KGF 2 would be closed by 2030. However, the trust in this promise was gone. Because of this, the Dorpsraad Wijk aan Zee wanted this closing year to be written down in Tata Steel’s permit. Grandia (2020, 499) highlights the documentation of facts as one of the ways in which victims of gaslighting can prevent themselves from falling

for gaslighting tactics. This documentation was not limited to this occasion only: in fact, my interlocutors constantly documented the facts of their case against Tata Steel's pollution for their initiatives. However, Tata Steel and the Omgevingsdienst Noordzeekanaalgebied (OD NZKG), the governmental organisation responsible for the factory's permits, did not want to note down KGF 2's promised closing year in the company's permit for this factory.

Therefore, Tata Steel's promise to close KGF 2 by 2030 was not legally binding, and they would face no consequences if they did not keep this promise. This caused a lot of frustration, not just for the Dorpsraad Wijk aan Zee, but also for many other citizen initiative groups in the IJmond. Tata Steel's neglect to solidify its promise, the government's lack of willingness to enforce it, and the company pretending they had never made such a promise before, was a way for Tata Steel to gaslight IJmond residents. However, my interlocutors did not let themselves be fooled twice, and did not believe in Tata Steel's promise regarding KGF 2 this time.

This, for my interlocutors, showed that the OD NZKG deemed the needs of the factory more important than those of the residents. Sara expressed a feeling of annoyance at this fact, which she deemed a result of the positive advertisements Tata Steel puts out in the IJmond. When driving around the IJmond, there were many billboards on the side of the road promoting their Tata Steel Academy, or their new plans for 'green steel' made in factories running on hydrogen. This seemed impossible to reach by 2030, and was also thought by my interlocutors to be so expensive that it would be unattainable financially. Both Lucas and Sara told me that Tata Steel creates these 'beautiful messages', which they publicised in newspapers and advertisements, and the factory sometimes even sent out their very own 'Tata Steel newspaper'. During my fieldwork in the IJmond, I received one of these: the issue reported things such as the Dutch national politics having positive comments about their 'green steel' plans, and that they were the largest employer in the region. These things often made my interlocutors feel like Tata Steel was trying to shift public opinion to receive more support, especially as other people in the IJmond often told them that Tata Steel was not that bad at all and that they were "already doing a lot to be more sustainable".

This positive messaging by Tata Steel through their own newspaper was an example of PR-tactics in corporate social responsibility (CSR), as described by Dolan and Rajak (2016) and Markowitz and Rosner (2013). CSR is a way for corporations and industries to show accountability within their business practices (Dolan and Rajak 2016, 1-2). However, this is

not always genuine and, like in the case of Tata Steel IJmuiden, often a tactic to mitigate responsibility and shift blame in order to decrease criticism and suspicion of their business practices. For example, Dolan and Rajak (2016) described a case in which corporations that had been accused of being bad for the environment were presenting advertisements meant to educate customers on how to be more sustainable (Dolan and Rajak 2016, 41). When asked about if these corporations were fit to educate people on this topic in the light of the accusations against them, officials from these corporations responded in a negative way, arguing that they were actively trying to make a change, in comparison with NGOs and activist groups that made “unfounded accusations” (Dolan and Rajak 2016, 41). Similar things could be seen in the IJmond regarding Tata Steel: as I witnessed during my fieldwork in the IJmond, the steel company often advertised their plans to become more sustainable in a way that made it seem as if they were close to reaching their goals, while they were far from this, according to my interlocutors. Furthermore, in response to reports by the RIVM and news articles on their pollution, Tata Steel regularly claimed that they had already reduced their pollution into the environment significantly, and that this was visible in their measurements. However, Lucas told me that data from the RIVM did not support these claims at all; in fact, their measurements showed that Tata Steel had barely made any improvements at all. Nonetheless, the steel company kept insisting that they had made improvements.

I argue that this is another form of gaslighting used by Tata Steel, similar to what Nixon (2011, 39) termed the ‘production of doubt’, as the factory tried to assert themselves as a company that was a good force within the region, and that they were willing to be more sustainable. Nixon (2011, 16) describes the main tactic of corporations and industries to produce doubt to be so-called ‘antiscience’, or the manufacturing of incorrect science to disprove actors’ involvement in slow violence. An example of this is the tobacco industry trying to produce doubt surrounding the true health effects of tobacco (Nixon 2011, 39). However, in the case of the IJmond, Tata Steel produced doubt through misrepresentation of the truth. “We know their positive messages and plans aren’t true,” Lucas told me, “but people believe it, and then we get attacked by the public for being against Tata.” This is a tactic of toxic gaslighting (Grandia 2020): people that express concerns are made to feel that their claims about the pollution are wrong, and that they are ‘crazy’ for doubting their safety. My interlocutors also felt like this, as they were commonly told that the higher levels of lung cancer were a result of people smoking, or that nearby highways, airplanes passing overhead,

and boats going through the North Sea Canal were just as polluting as Tata Steel, so it could not be that bad.

On one occasion, I even saw how fellow IJmond residents got attacked for speaking out against Tata Steel's pollution: after the 'Together for Clean Air' event, a quick scan of the comments people left on news reports and Facebook posts about the walk showed that people did think they were crazy for speaking out against Tata Steel. In a long list of comments, people were making fun of the participants of this walk, calling them crazy, weirdos, brainless, and people with nothing to do. Many of these comments contained supporting sentiments for Tata Steel, saying that the protesters could not be true residents of the IJmond, and that if the protesters did not like it, they should just move. Some comments even stated that participants should have been "kicked into the canal", or similar statements about participants being harmed. These comments showed the reality of advocating for their health and sustainability for many of my interlocutors; such comments did not even surprise them anymore.

The instances above were some of the most striking or most discussed moments during which my interlocutors recognised the gaslighting that they were subject to because of Tata Steel. As described, other people in the IJmond, who did not participate in any initiatives to address the pollution by Tata Steel, helped Tata Steel with this by calling my interlocutors crazy. This could perhaps also have been a result of them feeling a double bind (Bateson 1972), as they or their families were dependent on Tata Steel for making a living, or them being gaslit by Tata Steel as well. These could be reasons that many people were hesitant to protest against Tata Steel themselves. In the next section, I will analyse how my interlocutors felt that their concerns were being ignored.

### **All ears, but no action**

In any conversation about Tata Steel with my interlocutors, many of them expressed their frustrations with the lack of action they saw happening to make Tata Steel more sustainable and safer for the region. During a conversation with three members of Hollandse Luchten, Henk, Peter, and Vincent, two of them emphasised this even more: their concerns were definitely heard, but not listened to.

Nèri: Do you think local residents' concerns get enough attention?

Peter: Yeah, they're all ears!

Henk: The answer to this question is yes, but maybe you mean if they also do something with the concerns? In the eyes of people that listen to the concerns, they do, but in the eyes of the people that express these concerns, it is absolutely not enough. So it's a question of experience.

Peter: Yeah, over the years several ministers have visited the IJmond upon invitation by Wijk aan Zee and FrisseWind and stuff. They've listened to all those stories, and then didn't do anything with them.

This lack of action, to them, represented that these politicians did not think their concerns are important enough, and thus did not think these concerns are warranted. Grandia (2020, 506) explains that specific certifications such as green labels and permits can be enough for people to blindly trust the polluting industries when they claim their practices are safe, even when presented with proof that it is not safe. This meant that for these visiting politicians, the fact that Tata Steel reported that they were operating according to their permits may have been enough reason to dismiss Peter and Henk's concerns. Furthermore, ministers and politicians visiting the IJmond may not encounter the concerning effects of Tata Steel's pollution, because these are not immediately noticeable by visiting the IJmond for an afternoon. Besides the view of the tall chimneys that were hard not to notice throughout the region, other effects were a form of slow violence (Nixon 2011), such as the tight feeling Sara had in her chest and the bad smells that permeated throughout Wijk aan Zee. For a long time, people did not know anything about the pollution the steel factory produced, and thus were not worried at all (Kraan and Rozing 2023). This has changed significantly over time, especially due to the graphite rains and grey snow that were noticed once in a while in the surrounding towns, primarily in Wijk aan Zee, in 2018 and 2019. A key aspect of slow violence is that the effects of this violence build over time, taking a long time to become visible, and that these effects are often ignored by officials (Nixon 2011, 2). This, combined with the fact that a report by the RIVM (2023) revealed that people in the IJmond have a significantly higher risk of developing several types of cancer, has made the factory's pollution an even more prominent cause for concern.

The neglect of Tata Steel and the government to prevent this slow violence, in the form of toxic pollution, eroded people's trust in them. As Lucas said in a conversation, "there's always more going on than we think." This was particularly evident through recent news reports and archival research by Kraan and Rozing (2023), which revealed that Tata Steel and the provincial government had known for over forty years that harmful chemicals, including PAHs, which are known to cause cancer, were being released into the surrounding environment by the steel factory. However, this was kept silent and not paid attention to. Many of my interlocutors described a feeling of fear and unease with the fact that they or their family could be ill unknowingly, potentially only discovering this many years into the future. Peter explained that Tata Steel also practices other forms of neglect that causes slow violence for the IJmond: he revealed that while working at the steel company, the quench tower he worked in could not be maintained properly, because they did not have the time and materials for it. Despite this, the tower was approved by the company to continue operations. Peter expressed his surprise at this: "I thought, it's impossible. Never, never should that have been approved, because I knew it wasn't working properly." He did not dare to complain about this for fear of losing his job. This gives insight into the double bind (Bateson 1972) Peter experienced: despite his suspicions about the health effects and safety issues of the factory, he could not address these concerns. He described how more and more of his colleagues became ill, increasing his suspicions and worries, but if he expressed his concerns, he was sure he would have been fired. This caused him to, over the forty years that he has worked at Tata Steel, never express his concerns. Instances such as this, of which more and more examples are coming to light, significantly erode the trust people have in both Tata Steel and the government.

Besides the toxic gaslighting and production of doubt by the powerful actors in this case, I believe these actors also employed another tactic: the art of unnoticing (Lou 2022). Lou describes the case of a petrochemical plant in Guangzhou, China, where people justify living in certain polluting environments by actively employing the 'art of unnoticing' (Lou 2022, 581-582). In the IJmond, the effects of Tata Steel's pollution, which my interlocutors protested against, were not directly visible in the region, making them easier to be ignored, and cases of cancer or other illnesses could not easily be explained to be a direct result of Tata Steel's emission of harmful substances. Although Lou (2022) applied this term to citizens unnoticing the pollution in their local environment, I thus argue that this can be applied within the IJmond in the opposite way: powerful actors, primarily Tata Steel and the



government, were unnoticing the effects of the factory's pollution. Similar to Lou (2022), Bovensiepen and Pelkmans (2020) discuss 'wilful blindness' in a variety of situations, including pollution and climate change. They explain that wilful blindness, or ignorance, can be used to exert power over others (Bovensiepen and Pelkmans 2020, 3). As exemplified by the conversation with Peter and Henk, my interlocutors felt this art of unnoticing or wilful blindness in the way that despite the increased media attention and, to them, performative visits by government officials, there seemed to be no urgency in any action regarding the situation. "All kinds of people visit, and everyone has an opinion, but it takes an eternity before anything happens, if anything even happens at all." Henk said. Additionally, Sara told me that although Tata Steel had become a topic that was discussed more regularly in the Netherlands, she did not completely trust that anything would actually be done to improve her living situation. She was always left wondering what would happen next, because she felt like nothing would happen.

During a conversation I had with Julia, who worked for FrisseWind, about Tata Steel, she expressed her frustration about the lack of support from the government for IJmond residents. "Insane, right? I will never work for the government!" she exclaimed. This statement reflected what many of my interlocutors felt: they could not trust the government. This is also described by Grandia (2020, 507), who explains that citizens, after realising that they were being gaslit, experience feelings of betrayal and distrust towards the government in cases of toxic pollution. My interlocutors were sure that, although they were being heard, nothing would happen unless they fought harder. The way that this ignorance and neglect was felt caused a shift in people's relationship with the government: they felt like they would not be protected, and thus had to take matters into their own hands through initiatives to protest against Tata Steel's pollution. An important factor for this, in the case of Tata Steel in the IJmond, was the factor of time: the extensive amount of time that the steel factory had existed in the region, the time it had taken for effects to become noticeable, the time it took for politicians to take note, the time the OD NZKG let pass before looking at reports, and much more. This will be the topic of the next chapter.

### **3 – The ‘longest breath’**

On a Friday night after a busy day, I rushed to have dinner and leave the house to go to a Hollandse Luchten event. This would be the first meeting of the year for all three measurement groups in the IJmond (Velsen, Wijk aan Zee, and Beverwijk and Heemskerk). It was a sunny day, and the event was taking place in a museum not far from my house, so I walked there. I felt nervous; who was I going to meet, what kinds of people were going to be there? As I entered the museum, I was greeted by a man, who asked me what my name was before I could enter. After being crossed off the list, I rounded the corner towards the room where the meeting was to take place. The hallway towards the room, as well as the room itself, were set up with maps of the three measurement groups in the IJmond, adorned with coloured dots meant to show where each SODAQ air sensor was stationed. Inside the room, I saw a large group of people crowded around one screen, on which the coordinator of these meetings of Hollandse Luchten, Pauline, was showing a comparison of measurements between different SODAQ sensors. One thing stood out to me: I was the youngest person there, by far – most of the people there could have been my grandparents.

The Hollandse Luchten events were not the exception in this: during my research, I was often surrounded by elderly men, who were already pensioned or were nearing their pension. This was explained by my informant Pauline, who told me that most participants of Hollandse Luchten were pensioned, due to the fact that these people have more free time to occupy themselves with the project. Furthermore, most of the participants were men, because the project started off very technical: participants had to build their own particulate matter sensors before the project switched to the SODAQ sensors. This attracted people that enjoy technical projects, and because of this, the project continues in this direction, creating a vicious circle. The gender aspect seemed to have been more specific to the project of Hollandse Luchten, due to how the project was structured when it started. However, the importance of free time was a significant factor in every initiative within my fieldwork, meaning that people that participated either had enough time on their hands, or made time for it because they thought it was too important not to engage with.

There were also other ways in which time is important within this case. The most prominent way in which time was important was the slow violence (Nixon 2011) of Tata Steel’s pollution, having lasted for over one hundred years. This was exacerbated by the slow

response by the powerful actors of this case, which my interlocutors often complained about: Tata Steel, the government, and government institutions. In response to this, there are ways in which people fighting for a better situation can manipulate time to make an impact on the case, as explained by Ahmann (2018), who discussed the ways in which people in Maryland, protesting against a trash incinerator, manipulated time in their fight against this incinerator. I will analyse the different aspects of time in the case of Tata Steel IJmuiden, including free time needed for participating in the initiatives, the use of time by Tata Steel, and the use of time by the initiatives, in this chapter. First, I will illustrate how participation in these initiatives required a significant amount of time, and how this affected what kinds of people were able to participate. Then, I will describe how Tata Steel and the government used time to their advantage in this case, in the eyes of my interlocutors. Finally, I will explain how people who participated in initiatives in the IJmond used manipulations of time in their fight for a healthy living environment.

### **Free time**

As Pauline explained, Hollandse Luchten mainly attracted people who are pensioned, since these people had more free time for the project. Stefan, Henk, and Peter, for example, were all already pensioned, and were thus using their free time to learn more about the environment through Hollandse Luchten. This was also the case for the Dorpsraad Wijk aan Zee: most participants of this council were either already pensioned or close to their pension. However, even despite their increased amounts of free time, people often still found it difficult to be able to attend meetings or spend time on these initiatives, but made sacrifices in other parts of their life to be able to do this. Lucas, for example, had less than a year left as a pilot for a commercial airline, before his pension. Over the sixteen years that he had been a member of the Dorpsraad Wijk aan Zee, he had continuously made time for his activities within this initiative besides his demanding job. He told me that because his job did not have a typical nine-to-five schedule, he had some extra tasks within the Dorpsraad that his colleagues were not able to do.

For example, he explained that when the Dorpsraad was called to give a reaction on any news about Tata Steel, he was the one that was asked to make a statement on behalf of the village council because he was one of the only people that was regularly available during the day. After his first time doing this, he kept being asked to do this more and more often, taking up

an increasing amount of his time. However, it did not stop there: as the topic required a significant amount of knowledge of chemistry, and the case of Tata Steel IJmuiden had a long history, he felt like he had to learn more about it to give an accurate statement. Therefore, he spent a lot of time trying to learn as much as he could about the topic, spending a significant number of hours on it. He did not see this as a waste of time, but as something that helped him: “As time went on, I kept gaining more knowledge on the situation, and eventually you’re faced with the choice of leaving or fighting. Well, we know the details now, and we’re fighting!”

However, not all of my interlocutors had the time for these initiatives because they were pensioned. A significant portion of them had a job, and participated in these initiatives because they felt like this case was too important to not make extra time for. Sara, the person in charge of the core team I helped organise a mobilisation walk called ‘Together for Clean Air’ (*Samen voor Schone Lucht*) with, struggled to find a balance in this: between her job as a forest ranger and her hobby of surfing, which had brought her to championships several times, it seemed as if she had no more time left to concern herself with her local polluted environment. Nevertheless, she saw no way for herself to not engage with this topic. She told me about the difficulties she faced trying to combine her job and hobby with these activities: she got involved with local politics, voicing her concerns about Tata Steel, which required her to know a lot about this complex problem, such as knowledge of chemistry, of the factory’s permits, of environmental laws, and of health standards. Furthermore, she was invited to several programmes on television and radio to discuss the situation, starred in a programme about young climate activists, and eventually also came into contact with Greenpeace to help organise events, thus having to do all of these things on the side of her full-time job. This eventually led to her having to quit her job as a forest ranger. “If you do nothing, you slip into this victim role, a feeling of helplessness, while doing these things gives me a lot of hope and strength.” she said. She did not really see any other way for her to do all of these things that were so important to her while also working as a forest ranger.

Sara, as well as several other of my interlocutors, thus felt a lack of time in their lives to be able to protest against the pollution by Tata Steel. This is the opposite of the ‘timepass’, or surplus time, described by Jeffrey (2010) in the case of young men in India, who, as a result of their surplus time, spent a large portion of their day ‘waiting’ or ‘hanging around’. This enabled them to engage in political action regarding topics such as costs of education and

corruption in universities. As the experiences of my interlocutors show, the opposite was the case in the IJmond: people experienced a lack of time in their daily lives, which occasionally prevented them from being able to protest against Tata Steel's pollution as much as they desired. Other members of the Dorpsraad Wijk aan Zee, for example, would have wanted to help Lucas out with his extra tasks more, such as making official statements for newspapers, if not for their full-time jobs. Additionally, as explained, Sara had to quit her job in order to engage with Tata Steel's pollution in the way that she wanted to; it was simply too important to her. Some people tried to combine a full-time job with their activism, such as Marlijn.

Marlijn rushed home from her work in Hilversum back to her home in Heemskerk every week to make it to our weekly core team meetings. But besides the fact that she spent a significant amount of her free time working to protest against Tata Steel, like Lucas and Sara, she also did this in a different way: she wrote poems and made drawings to express her feelings about living near this steel factory, which can be read in the Appendix. At the end of the 'Together for Clean Air' walk, she recited one of her poems, about how the factory was growing 'inside of her'. In this poem, she described how, living near Tata Steel, she and the factory were more and more becoming one; the factory was part of her home, the region that she loved and grew up in. A translated section of her poem reads:

I am a growing, living, dirty, smelly, and roaring factory  
That cannot give way any longer  
The factory tells me, or I her  
Because working against a growing factory  
Is not something you can do alone

This poem details how my interlocutors experienced living near Tata Steel. As time progressed, it became part of their lives more and more, almost becoming part of their identity. This was further brought home by public perceptions of the IJmond region: my interlocutors explained that whenever someone mentioned living in the IJmond, the immediate response that came was "Oh, near Tata Steel? What is it like?" Lazar (2014, 100-101) called this constant, repetitive, and seemingly never-ending political activism 'attritional time', causing feelings of exhaustion within people because there was no clear solution on the horizon. This could also be seen in Marlijn's writing of this poem, which shows how she thought there was no end in sight, as she described turning into a steel factory herself.

Furthermore, it shows much time people really spent on this case, not just through initiatives, but also through rumination and worrying about Tata Steel and all its (potential) effects. What did not help this overthinking is the amount of time Tata Steel and the government took to respond to citizens' concerns. I will analyse this in the next section.

### **Slow responses**

The time my interlocutors chose to spend on these initiatives was not the only way in which time was important in the Tata Steel case. Another important aspect of time, which my interlocutors frequently brought up in conversation, was the slowness of Tata Steel and the government's responses to complaints and concerns that were raised. There were several ways in which either Tata Steel, the government, or governmental organisations used time in a way that was frustrating to my interlocutors.

Kooksgasfabriek 2 (KGF 2) was one of the main targets for complaints voiced about Tata Steel, primarily due to the smell it produces. This was a part of the factory that was used to produce so-called 'cokes' through a process that removes the impurities from coal, after which some of the removed impurities, such as hydrogen gas and methane, yielded 'coke oven gas', which could be reused in other parts of the factory. This 'cokes' was then used in the production of crude iron. KGF 2 was seen by many of my interlocutors as the most polluting part of the factory, as it was said to have many 'leaks' through which chemicals dissipated into the environment and was severely outdated. Since the start of its operations in 1972, KGF 2 had not changed much, according to Peter; he worked at KGF 2 for almost 40 years, and although Tata Steel had taken steps to make it safer for its employees as well as the environment, it was still not good enough. He thought this part of the factory should have been closed as soon as possible, especially after having seen many of his colleagues become ill, or even pass away. During his work there, he already thought the situation in the factory was not good, and they should have been taking steps to make it safer. However, he felt like he could not express these concerns, because, as he said, it would not have been without consequences. This is why, after years of hearing that there was not enough money for the necessary maintenance or renovations, he did not complain about this. A good example of this is Peter's story of KGF 2's quench tower being approved for business, despite Peter's knowledge that it was severely behind on maintenance and not working properly. In 2024, ten years had passed since he left the company, and he felt frustrated about the fact that Tata Steel

only seemed to make improvements because of the increasing pressure from surrounding residents and media, instead of using their workers' expertise. Through postponement of important things, taking a long time to take safety and sustainability measures, Tata Steel used time in such a way that local residents felt worried about what else could happen.

My interlocutors saw Tata Steel's use, or in their eyes, abuse, of time in another way too. Several members of the Dorpsraad Wijk aan Zee explained how the promises that Tata Steel failed to keep, and regularly postponed, made them feel betrayed and foolish. The main example of this was Tata Steel's promise to close KGF 2, first by 2018, which never happened, and then by 2030. This, in the eyes of my interlocutors, was a way for Tata Steel to temporarily get people 'off their backs', to make it seem like they were taking steps to improve the situation in terms of sustainability and health effects. However, my interlocutors saw no reason to believe this newer promise, since Tata Steel could not keep their first promise either. Furthermore, as Lucas explained, the Omgevingsdienst Noordzeekanaalgebied (OD NZKG) was not willing to put this promise of closing KGF 2 by 2030 in the factory's permit to make sure that it is kept. This meant that the promise was not legally binding, and my interlocutors could not trust this promise. And they indeed did not put their trust in it: many times, I heard people say things like "that probably won't happen anyways" and "Tata never keeps its promises". Furthermore, Tata Steel had known that they were harming the surrounding environment and the people in it for decades before it was revealed to the public (Kraan and Rozing 2023).

Several of my interlocutors thought the factory's long history in the region has benefitted them significantly in this case. Julia, for example, a young woman working for FrisseWind, thought that its century-long presence in the region caused a certain normalisation of its pollution: people saw the soot, the dirt, and the smell, among other things, as part of normal life in the IJmond, especially as many people grew up with these effects of Tata Steel's pollution. This can also be seen as a way in which people practice the 'art of unnoticing' (Lou 2022), as people dismissed these effects of pollution to justify living in the IJmond. This normalisation frustrated Julia, as well as other interlocutors of mine, because it made them feel like other people did not care about Tata Steel's pollution. Julia suspected that this normalisation was the reason that the group of people that participated in these initiatives did not seem to be very large: if people got used to the idea that it is 'normal', combined with the

gaslighting people are subject to, which I explained in the previous chapter, it takes a long time for people to find the courage to ‘fight back’, Julia said.

Julia also told me about another manipulation of time, in Tata Steel’s benefit. FrisseWind has a project called Spot the Toxic Cloud (*Spot de Gifwolk*), for which they had several cameras aimed at the Tata Steel terrain. These cameras are meant to monitor any toxic clouds being released by Tata Steel, meaning any clouds that are brown, black, yellow, or orange. Julia was in charge of making reports to the OD NZKG about the toxic clouds that were spotted by these cameras from FrisseWind. However, she told me, the OD NZKG had changed their reporting tool in such a way that it became increasingly difficult to make these reports. Furthermore, the OD NZKG has told her that they had to communicate the reports of the toxic clouds to Tata Steel within two weeks of it happening, but they left Julia’s reports in the system for so long that they came back to her with a disappointing message often: it had been more than two weeks, so they could no longer forward the report to Tata Steel.

Through this negligence to act against the pollution that my interlocutors were subject to, we can again see the slow violence (Nixon 2011) in the IJmond: during the 106 years that the factory had existed in the region, the pollution accumulated over time, both in the local environment (through smell and dirt, for example) as well as in people’s bodies (through increased rates of lung cancer in the region (RIVM 2023)), the effects of which had mostly come to light in recent years. As concerns and protests from people in the IJmond became more and more prevalent, my interlocutors started to feel that Tata Steel, the provincial government, and the national government failed to take significant steps to minimise these concerns and risks for residents. Through little things like the OD NZKG not forwarding the reports in time, Sara, Julia, and Lucas, among others, lost trust in the institutions that were supposed to protect them from the harm caused by Tata Steel’s pollution. This was a drive for them to continue to fight against Tata Steel in initiatives, which to some seemed like a never-ending fight.

There were also other people that said Tata Steel’s extensive history in the region benefitted the factory. During the ‘Together for Clean Air’ event, several people named the ‘foreverness’ of Tata Steel (*de eeuwigheid van Tata*) as a reason that it was so hard to make significant changes in this situation. But also during the meetings I attended from the Dorpsraad Wijk aan Zee, people complained about the fact that it took so long for anything to happen because



there were so many different stakeholders at play: not only Tata Steel IJmuiden, but also the larger Tata group to which the Dutch production site in Velsen-Noord belongs, as well as provincial and national politics with all its different parties. Nixon (2011, 9) describes that in cases of slow violence, it is often hard for any type of legislation or measures that target this violence to be established. This is a result of the fact that the political ‘agenda’ could change every four years (in the case of the Netherlands), when new elections may bring about new politicians with new goals and different experiences, starting the process anew. Furthermore, the benefits of these measures or legislations may not be immediately visible: due to the scale of the pollution by Tata Steel, both in terms of size and time, the effects of it are likely to linger for many years after the factory has either closed or become completely sustainable. In this way, as well as through the things described above, Tata Steel benefitted from time, and also used it to its advantage.

### **Slow resistance**

In the many ways that Tata Steel used time to its advantage, the people in the IJmond also had their own ways in which they tried to improve their case with the help of time. My interlocutors often said that this fight for a safer and healthier environment was one that depended on them being able to keep going for a long time, or as they would say it, ‘a long breath’ (“*een kwestie van de lange adem*”). Their battle had been going on for years already, and as more people joined the initiatives, they tried to shift the tides to their side bit by bit.

One of the first things I heard people from the Dorpsraad Wijk aan Zee say about the Tata Steel case was that they had to change the narrative, changing the public perception of the case in such a way that society would see the reality of the situation that they were dealing with on a daily basis. Saunders and Al-Om (2022) described ‘slow resistance’ in asylum seekers and immigrants in the United Kingdom, which is a form of protesting as a response to slow violence, which to a shift in values or narratives through making certain issues more visible. As Lucas told me during a conversation, they were slowly but surely succeeding in shifting the narrative: the case gained a lot more attention from the media in recent years, most of which discussed the negative effects of Tata Steel’s pollution. As a result, there was an increase in research on the effects of Tata Steel’s pollution, such as the RIVM research and its resulting report (RIVM 2023). My interlocutors’ extensive, long-term dedication to this case had thus brought about the increased monitoring of Tata Steel by the RIVM. However,

they also did this themselves, with Hollandse Luchten monitoring the air quality through levels of particulate matter, and FrisseWind setting up cameras that monitor the factory 24 hours a day, seven days a week, for their project Spot de Gifwolk. This monitoring enabled them to compile a significant list of safety violations of the factory, which they could then report to the OD NZKG. As explained by Julia, the OD NZKG did not always review these reports in time for anything to happen as a result. Nonetheless, there have been many occasions in which the OD NZKG issued a fine to Tata Steel as a result of these reports, which were part of incremental penalty payments. This meant that as the factory committed more violations of their permits, the price of the fine would be raised according to three 'levels'. In June 2024, Tata Steel had already received six fines of €100,000 on the third and final 'level', having had to pay 41 fines so far.<sup>4</sup> As a result, the OD NZKG was looking into revoking Tata Steel's license for their cokes-gas factories (*Kooksgasfabrieken*).

This was the first of several ways in which the initiatives used time to fight for their environment and health. By monitoring the environment around the factory and compiling 'evidence' over an extended period of time, they were slowly starting to see the effects of their efforts. Ahmann (2018, 142) describes a strategy of manipulations of time employed by concerned residents in Curtis Bay, Maryland, protesting against a trash incinerator, the construction of which was releasing lead, mercury, and particulate matter into the environment. There were three 'styles' within this strategy, according to Ahmann (2018, 146): incrementality, or the build of smaller actions over time; deferral, or ensuring that operations cannot continue as normal; and concentration, or the 'strategic manufacture of events' into specific moments. In the IJmond, the monitoring of Tata Steel and its pollution was a form of incrementality, building over time and mirroring "the rhythm of slow violence" (Ahmann 2018, 154). This incrementality is not necessarily something that was very noticeable; people simply reported concerning incidents, such as large, yellow clouds or chemical smells, to the OD NZKG. However, this strategy made an impact, both in the IJmond and in Curtis Bay, through "small, successive victories" (Ahmann 2018, 155). With the help of this incrementality, people in the IJmond tried to achieve the second 'style' in the strategy described by Ahmann (2018, 157): deferral, or delay. The incremental penalty payments issued by the OD NZKG, as well as the potential revocation of permits, would cause

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<sup>4</sup> <https://tata.odnzk.nl/faq-handhaving-tata-steel-kooksgasfabrieken/#hoe-verloopt-het-proces-van-verscherpt-toezicht-en-hoe-gaat-het-nu>, accessed on 07-06-2024.

problems within Tata Steel's ability to keep operating as usual, thus causing the factory to have to delay their operations.

As a third 'style' within this strategy, Ahmann (2018, 159) described concentration, or the building up of efforts into one designated moment. The initiatives in the IJmond also concentrated their efforts into specific events. The Together for Clean Air (*Samen voor Schone Lucht*) walk was one of such moments: this mobilisation event was set up by several organisations that concern themselves with the environment and health, including Greenpeace, FrisseWind, the Surfrider Foundation, BODE, and Gezondheid op 1. For this event, concerned IJmond residents were asked to send in messages in which they could express their worries and wishes for the future of the IJmond and Tata Steel, such as "Tata, I respect you, but I'm also angry with you", and "I don't want to raise my children in the IJmond because I'm worried about their health." In addition to this, all concerned people in the Netherlands were asked to send in their name for a large banner that was revealed at the end of the walk: all of the people's names together formed the words '*Wij Willen Schone Lucht*', or 'we want clean air'. All of these messages were presented to Tata Steel and to politicians, in an attempt to show them the urgency of the situation for people in the IJmond. This could also be seen as a form of moral punctuation, as explained by Ahmann (2018, 160): it showed that after all these years, residents of the IJmond still did not feel safe because of Tata Steel's pollution. Time had passed since the last protest event, but the necessary steps for improvement had still not been taken. By concentrating their efforts into one specific event, concerned IJmond residents were able to send a stronger message, with the help of the organisations that made this event possible.

Evidently, time had its significance in the Tata Steel case; people needed to either have a significant amount of free time, or make more time to be able to participate in initiatives addressing the pollution by Tata Steel IJmuiden. Furthermore, there are several ways in which both Tata Steel and concerned residents were able to use time to their advantage, working against each other in many ways. Through this chapter, I have showed that in their dealing with Tata Steel's pollution on a daily basis, my interlocutors faced several ways in which time added more difficulties to the situation. Nonetheless, this also provided important insights into how they used time themselves, despite these difficulties. As Lucas and his colleagues often repeated: the most important thing was that they were able to keep going, to ensure that they had the 'longest breath'.

## Conclusion

Throughout this thesis, I have described how and why my interlocutors engaged in initiatives that concerned themselves with the pollution by Tata Steel IJmuiden, and what effects this had on their daily lives. I have done this by using Sternsdorff-Cisterna's (2015) concept of 'scientific citizenship', referring to a changed relationship between citizens and the state as a result of increased scientific knowledge among citizens and decreased trust that the state would protect them. For this, I used a different main theme for each of my three chapters, as a lens to show different aspects of my interlocutors' experiences engaging in initiatives: expertise, manipulation, and the role of time. This thesis aimed to answer the following research question: 'How do people in the IJmond region, who engage in initiatives that address pollution produced by Tata Steel IJmuiden, exercise a form of scientific citizenship, and what contestations exist surrounding these initiatives?'

By describing the way my interlocutors engaged with knowledge and gained expertise through this in the first chapter, I have shown what these initiatives and their practices looked like. By applying Krick's (2022) descriptions of citizen expertise, we can see the importance of the forms of knowledge that my interlocutors brought into the discussion surrounding Tata Steel's pollution. This knowledge was especially valuable because it was not just formed on the basis of scientific data collected by organisations like the RIVM, but also on citizen science projects such as *Hollandse Luchten*, collected by citizens themselves, and on my interlocutors' daily experiences with Tata Steel's pollution. This chapter thus showed how, and in what ways, my interlocutors gained a significant amount of scientific knowledge by engaging themselves with Tata Steel's pollution.

Next, through the lens of manipulative tactics and corporate social responsibility (CSR), I showed how my interlocutors noticed that they were being gaslit and ignored by Tata Steel and the Dutch national government, leading them to feel that their concerns were not being heard. By applying the concept of 'toxic gaslighting', which Grandia (2020) described in the context of toxic chemicals in indoor floor carpeting, I demonstrated how this specific form of gaslighting occurred in the IJmond. CSR played a large role in this, as Tata Steel repeatedly claimed to be a good force in the region with the help of PR campaigns, and to have reduced the amount of pollution they emitted. This showed how Tata Steel, in the eyes of my interlocutors, attempted to show accountability and responsibility for their business practices,

albeit untruthfully, like many other global companies (Markowitz and Rosner 2013; Dolan and Rajak 2016). By applying the concepts of ‘the art of unnoticed’ (Lou 2022) and ‘wilful blindness’ (Bovensiepen and Pelkmans 2020), I have described how my interlocutors noticed that the government and Tata Steel were actively ignoring the pollution and their concerns about this. Through this manipulation and ignoring, my interlocutors lost trust in Tata Steel and the government, and did not believe that these actors would protect them in any way.

In the third and final chapter, I have shown the different ways in which time played a role in the case of Tata Steel’s pollution: the time my interlocutors needed to participate in initiatives and protest, the slowness of Tata Steel and the government’s responses to complaints, and the slow retaliation by my interlocutors in response to the slow violence (Nixon 2011) of the pollution. With the help of Jeffrey’s (2010) description of ‘timepass’, signifying surplus time, I have shown how my interlocutors suffered from a lack of time instead, making it difficult for them to balance their activism in the Tata Steel case with their daily lives, such as their jobs, family life, hobbies, and friends. Furthermore, with Ahmann’s (2018) explanation of how activists manipulate time to their advantage in protests, I have analysed how people in the IJmond applied this technique. Time thus provided certain difficulties and contestations for my interlocutors and the initiatives they participated in, but also gave them innovative ways to respond to Tata Steel’s slow violence.

This thesis has contributed to debates on citizen science and activism in cases of industrial pollution, with the added aspect of the role that temporality and time plays in this. I provided insights into how these debates worked together, specifically in the context of a densely populated area in the Netherlands, a wealthy and developed country. Contributing to the recent increase in discussions about Tata Steel in the IJmond, I have highlighted the practices and opinions of my interlocutors, as citizen experts on the steel company’s pollution through both experience and scientific data, emphasising the importance the experiences of these IJmond residents.

As the case of Tata Steel’s pollution is such a lengthy one, with many involved actors and differing opinions, there is a lot that I was not able to include in this thesis. I focused explicitly on the people that were active in initiatives, but, as mentioned, there were also many people that were on Tata Steel’s side in this debate, for example. As there were so many interesting aspects to this topic, it is impossible to highlight all sides of the debate. Thus,

while I have provided insights into the activist side of the IJmond, it is important to keep in mind that this discussion is also causing polarisation within the IJmond, and I think this topic would benefit from insights into this divide between IJmond residents' experiences of living underneath Tata Steel's toxic cloud.

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## Appendix: Marlijn's poems

In this appendix are the poems written by Marlijn about Tata Steel and her experiences living near this steel factory. I have chosen not to translate these poems, other than the section used in Chapter 3, since translation could potentially alter the sentiments and feelings intended in the poem. More of Marlijn's poetry and art can be found on <https://www.mar-lines.com/>.

### Er groeit een fabriek in mij

Er groeit een fabriek in mij

Met elke hap lucht neemt ze toe  
Ze krijgt gangen, overleg ruimtes  
En een heuse boardroom

Er groeit een fabriek in mij

En er is niets dat ik kan doen  
De productieteams draaien overuren  
Ze kunnen de toelevering bijna niet aan

Als ik ren in de duinen  
Of met mijn kinderen  
Een kuil graaf op het strand  
Groeit ze harder

Er is al een kantine  
En sinds kort een kleine  
Goederentrein nu het spoor  
Is opgeleverd

Er groeit een fabriek in mij

Alleen als ik even weg ben om te werken  
Staat de productie stil  
Blijven de pijpen rookvrij

Kan het personeel even ademen  
Worden koffiepauzes ingelast  
En is er gelach te horen in de gangen

Maar zodra ik me vanuit Hilversum  
Begeef richting Heemskerk  
Wordt de rust met arbeid vervangen

En ik kan het niet helpen  
Hier is thuis, ik wil nergens anders zijn,  
Dus word ik stukje bij beetje fabriek

Het productieteam denkt aan uitbreiden  
De directie ziet winstkansen  
En de aandeelhouders graaien in de kas

Mijn echte prijs is iedereen vergeten  
Ik ben een groeiende, levende,  
vieze, stinkende en ronkende fabriek

Die niet langer kan wijken  
Vertelt de fabriek mij of ik haar  
Want een groeiende fabriek tegenwerken

Kun je niet alleen

### **Er groeit een fabriek in mij – deel 2**

Ik spreek je taal niet  
Ik snap de woorden  
maar ik versta ze niet  
Ik ben geen stakeholder  
Al knik ik ja  
Er is geen kooksfabriek  
In mijn bestaan  
Je vlagt ze eruit:  
'On top of the world'  
en 'groen staal'.  
Graffietregens, de boardroom,  
Tata!

Ik denk aan hoe hoogovens  
Schoonovens moeten zijn  
Maar ik knik  
En regen met grafiet  
Is regen vol verdriet  
Dus ik snik  
Maar je ziet het niet  
Mijn gezicht praat  
geen fabriekstaal  
Je verstaat me niet

In de stilte klikt de klok  
Je hebt een 'harde stop'  
Dat betekent dat je door moet  
Ik voel alsof ik je tijd vergooi  
En wie ben ik?

Nog één gedicht dan, sta me toe  
Omdat spreektaal niet kan zeggen  
Hoe ik me dan toch voel  
Voor wat het waard is  
Voor een potentiële klik

Er groeit een fabriek in mij  
Lees ik voor  
Terwijl ik ogen op me voel  
Er groeit een fabriek in mij  
Is mijn zin  
En het klopt  
Ik hap de lucht in  
en lees mijn gedicht  
In de fabriek  
Ben ik begrip  
Voor de fabriek  
Voor de directeur  
Voel ik begrip  
Want hij moet door  
En wie ben ik?