MOBILITY

MUSEUM

2050

Foreword

It's like déjà vu all over again.
~ Yogi Berra

The Mobility Museum 2050 displays key mobility disruptions. While based on different technologies, these disruptions show striking similarities. This suggests that there is much to learn from our mobility history. The central and recurring insight from this museum: mobility is not a complex puzzle that can be solved with technology, but is ridden with cultural values and animal spirits. The five artefacts selected by different curatorial teams and described in this catalogue are testament to this. The same goes for policy making, which can never be left to an algorithm, but is an inherently human enterprise. Therefore we included three practitioner profiles of ‘agents of change’ from the year 2019.

Look back and enjoy the ride.

Looking back from 2050

Mobility as a window on an ever-changing world

What were they thinking?

It is a question that we should keep asking ourselves; curiously, not cynically. It is a question that helped us compose the Mobility Museum 2050. Disruptions in the mobility system tend to signal something bigger: a cultural shift, a change in how the world is conceived and thus experienced.

In the late 19th century, horse manure was piling up in the streets of European cities. The smell was unbearable, but how could the mobility system function without horse carts? Even in attempts to think about moving on wheels rather than hooves, it proved very difficult to conceive mobility beyond the horse that had been a loyal companion for so many decades (see Figure 1). In 1894 the Times predicted that "in 50 years, every street in London will be buried under nine feet of manure." The situation came to be known as the 'Great Manure Crisis of 1894' (at display in this museum).

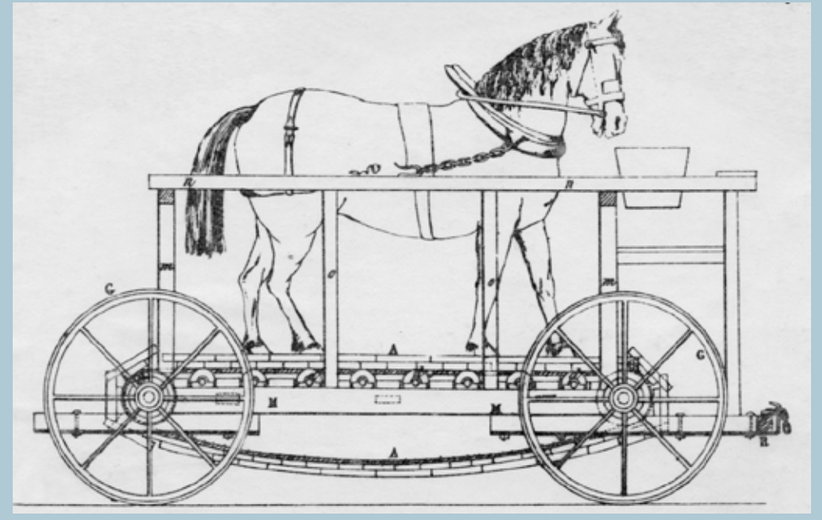


Figure 1. Brandreths horse powered locomotive Cycloped Plate (Source: 'History and Progress of the Steam Engine' by Elijah Galloway)

Despite fierce debates among urban planners and various studies into the matter, a solution remained elusive for years. This changed when Karl Benz, Gottlieb Daimler and others introduced motorized vehicles at a massive scale. By 1912 the crisis had been resolved. Electric trams and motorbuses had replaced horse-carried vehicles in the major cities.

However, this explosive growth in the number of trams and motorbuses was not meant to last forever either. After the Second World War, the era of the private car commenced. The groundwork was laid by modernist architects like Le Corbusier, who proposed a strict separation of different types of mobility and by designers like Norman Bel Geddes, who managed to link car usage to a vision of the good life. The messy and bustling city was seen as outdated; urban planners preferred a clean city that gave cars ample opportunity to get to their destination as quickly as possible. With private cars came large separate shopping malls, business parks and suburban areas.

Robert Moses, the by now infamous city planner of New York (1888-1981), once said: "When you operate in an overbuilt metropolis, you have to hack your way with a meat ax". The city government of Amsterdam attempted this meat ax-approach in the 1970s, when it intended to build a subway line with a highway on top straight through the historic city center, replacing all existing building stock with high rises. A colorful combination of both squatters and conservationists was less pleased with this envisioned future and protested fiercely. The heated debate even turned violent, in a series of events known as the 'Nieuwmarkt Riots' after the name of the historic area that was to be destroyed. Tensions in the city mounted and culminated in the infamous 'Battle over the City' on March 24, 1975: a violent confrontation between protesters and the military and municipal police who tried to evacuate all houses around the Nieuwmarkt area (seen in this museum).

The subway line was eventually finished, but the highway and the office district never made it all the way through. The Nieuwmarkt Riots became a testament to the resilience of urbanites taking matters into their own hands and, in the spirit of urbanist Jane Jacob, a call for planning based on people. In hindsight, these struggles were also a first sign that the era of the bond between the private car and modernism was nearing its end. The first seeds for novel discourses about urbanism were sown.

In 2002, the entrepreneur and academic Richard Florida published The Rise of the Creative Class. In this book, he argued that in the 'post-Fordist' era cities would become even more important since they are the places where creative people flock together and, as a consequence, economic growth occurs. Florida's thesis proved by and large correct for the two decades after the publication of his book. Cities thrived, and modal splits for cycling and walking increased significantly. Private car ownership was increasingly seen as anachronistic, taking up a lot of valuable urban

space. Cities became clusters of a progressive and likeminded elite. In Utrecht, the Green Left party won the elections of 2022 by a landslide. The alderwoman for mobility, Lot van Hooijdonk, started her third term by announcing a bold new direction: all private cars were banned from the city center.

According to leading historians, Utrecht's bold step marks the beginning of a decade of regained self-confidence in mobility policy throughout the Netherlands. Big infrastructure, mobility concepts, cost-benefit analysis and even parking policy were suddenly 'hot' and societally relevant again. Yet, the new bravura in policy making also had many consequences that were completely overlooked by policymakers and others across the country. Were they blinded by hubris? These last 30 years of regained confidence that came with the ignorance of several crucial undercurrents have a prominent role in the Mobility Museum 2050. In analyzing the different 'shocks' in our contemporary mobility history, we continuously pose the question mentioned in the beginning: 'what were they thinking?'
What was the Randstad thinking when they ignored the periphery? For years, expansion of the Randstad was the focal point of urban policy. Providing services like a stable supply of energy to this area was a key policy priority, even if this was to the detriment of other areas. For decades, natural gas was extracted from the peripheral region of Groningen; the financial benefits were for companies and the Dutch government in The Hague, the earthquakes for the residents of Groningen. This imbalance triggered a response that would change the history of the 21th century. The art piece 'Power Equilibrium' in this museum looks back at this dramatic turning point.

What was the city of Utrecht thinking when they made all public transport free? The confidence of Utrecht's city government grew due to the success of their early mobility renewal initiatives. This led to increasingly bold policy decisions, such as the introduction of free public transport. A crucial practical constraint, the fact that the existing transport system could not accommodate the explosive growth in demand, was overlooked. The clothing pieces of the 'commuting and survival wear' in this museum are a reminder of the chaotic situation that ensued.

What was Uber thinking when they ditched they drivers by automating their fleet? At the onset of the gig economy, the premise seemed attractive: freedom and flexibility to choose various ad-hoc tasks when it suited the worker best. However, these workers were formally independent and had no safety net. In 2036, the ride service company Uber jumped on the automated vehicle bandwagon and suddenly laid off all its drivers. The drivers successfully came together to change the system as a collective. The artefact 'How Uber changed my life, twice' presents the two sides of this story as experienced by one driver.What was the national government when they ignored the silent majority against private car ownership? Promoting car sharing seemed a no-brainer around the year 2020. At the same time, facilitating private car ownership and the infrastructure this required remained a central pillar in policy as well. Ultimately, the two could no longer co-exist and the support for car sharing became the seedbed for a violent backlash to car ownership. The protest sign from 'The Clash to Zero' uprising displayed in this museum pays tribute to this historic moment.

What were people thinking when they stopped moving? The foundation of mobility policy is that people are moving. Around the year 2040, this shifted as automation took over much of the labor market as well as home entertainment. Working weeks became much shorter and all basic needs were at people's fingertips from the comfort of their own homes. The artefact of 'The end of driving' in this museum takes us back to the miraculous rise of collective immobility that ensued.

Curious about these questions? Read more about the key events in our mobility history in the pages that follow.

‘Power Equilibrium’
Source: on loan from Tess Apelschorn. Curated by: Justien Dingelstad, Mady Hof, Nadia Hummel & Gustav Thungren.

2031

The Emancipation of the Periphery

For many of us, the toppling of the transmission towers by the Power to the Periphery (P2P) movement in 2031 is still a vivid memory. For a long time the national government paid little attention to the periphery as the central areas were prioritized. The P2P movement ended this unequal treatment: political and economical attention became evenly distributed between central and peripheral areas. Yet, few recall how this movement came about and why it changed our minds so radically.

Image 1: Official P2P logo

The P2P movement was born in Parkstad Limburg. Between the 1900s and the 1960s, the region produced energy for the entire country from its many coal mines. However, the mines were closed in the 1960s and the region went through decades of low employment rates, economic stagnation and a shrinking population. Yet from 2010 onwards, Parkstad’s investment in sustainable energy production turned the tide. Two factors turned out to be essential for the success of the region in this energy transition. Firstly, the region had space to build solar fields and wind turbines, but also old mines that provided opportunities for the production of renewable energy trough ‘water mining’ projects. Secondly, the region had people, and not just any people - citizens with entrepreneurial mindsets, that were determined to relieve their region from the burden of shrinkage and economic decay. With initial developments funded by the local government, younger generations had started to move into the region to work in the sustainable energy sector. Many of them organized work according to traditional self-organization forms to elevate energy production: citizen cooperatives, which were often inspired by the landmark book ‘Triumph of the Collective: how collectives save the planet’ (2021) by Harvard professor Eddie Rough. Mobilizing in energy cooperatives, Parkstad citizens pooled resources for investments in solar fields, wind turbines and mine-water systems and reaped the benefits. They

proved to be very successful. According to the Dutch Central Bureau of Statistics, in the 2030 the density of energy cooperatives per km2 was 67,4% higher in Parkstad than in the Randstad, and people were 63,2% more likely to be part of an energy cooperative in Parkstad than in the Randstad. This success was supported and facilitated by the local government of Parkstad, in terms of initial financial backing and directed policy projects.

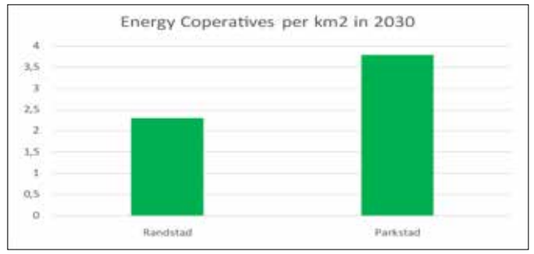


Image 2: Difference between Randstad and Parkstad in energy cooperatives per km2 in 2030, source: CBS

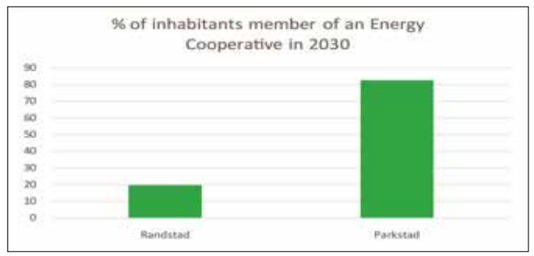
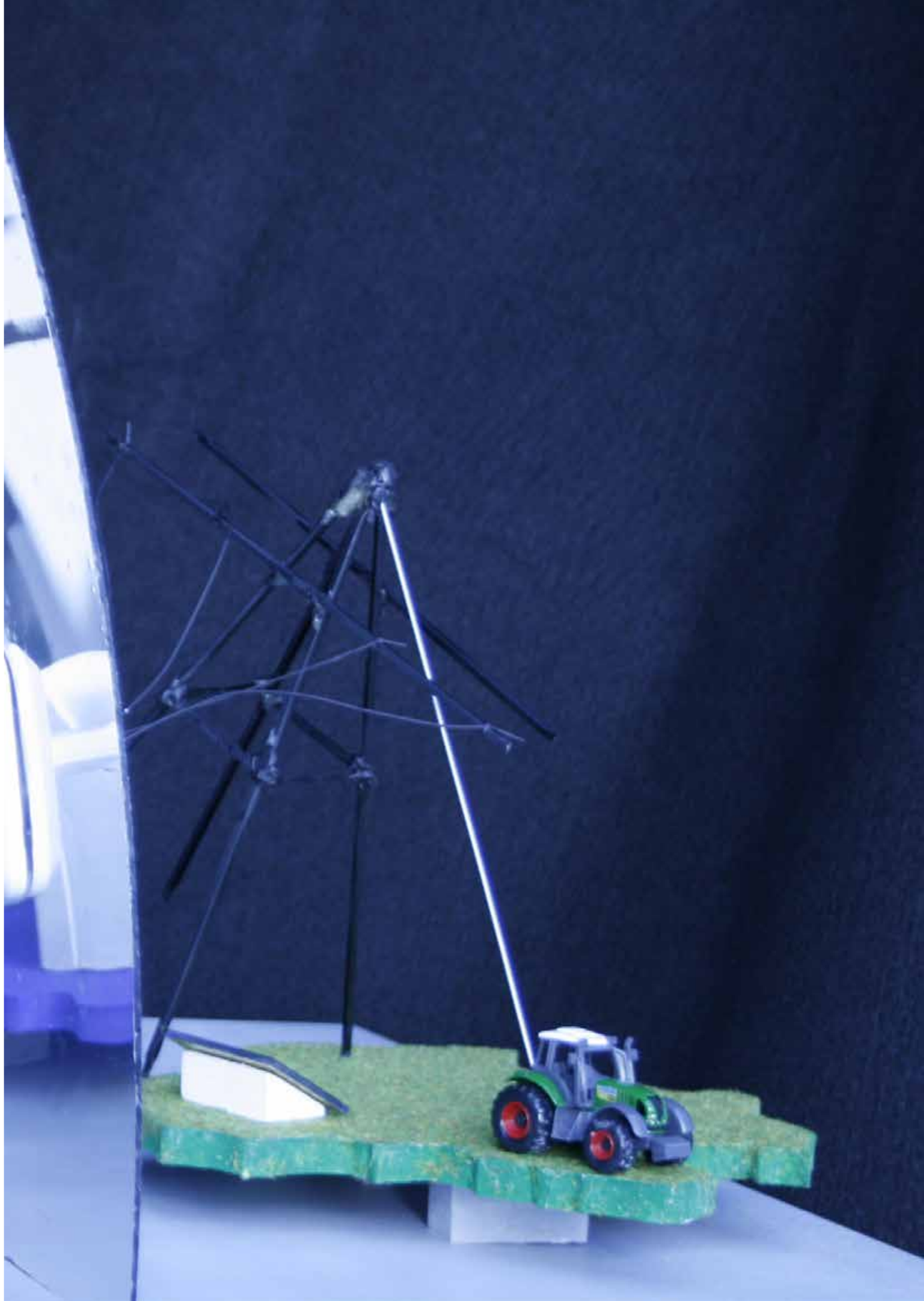


Image 3: Difference between Randstad and Parkstad in % of inhabitants being a member of an Energy Cooperative in 2030, Source: CBS

The success of the Parkstad region enabled it to reclaim the position it had been in during the coal mining days: producing surplus energy that could be sold to other parts of the country, although now in a sustainable way. The cooperatives did not only prove successful in fostering sustainable energy initiatives, they also proved highly resilient: producing and consuming energy locally, independent from the national grid. These exact factors turned out to be critical during the many storms, which we now know were the children of climate change. Sparking a national crisis, these storms caused blackouts in the central urban areas of The Netherlands. Since energy security was in the national government interest, and urban areas were prioritized over peripheral areas, the national government redirected energy from Parkstad to prevent blackouts in the cities, without any consent from the cooperatives. The cooperatives and their members were severely affected: they were left without power sometimes for days without receiving proper compensation.

A few years passed in which Parkstad was repeatedly ‘exploited’ for its sustainable energy. During those years, citizens of Parkstad re-



mobilized, now in an angry social movement called P2P, short for Power to the Periphery. In their nowadays famous manifesto ‘P2P: the end of peripheral exploitation’ (2029), Janssen & Jansen set out their ultimate goal: ending the government’s urban bias, which allowed for the draining of sustainable energy from resilient communities to favor central urban areas. The movement’s first few years were marked by relative calm, with occasional protests at the Malieveld in The Hague. However, as local politicians repeatedly informed P2P that they were unable to override national government decisions, P2P members decided direct action was needed to express their resentment.

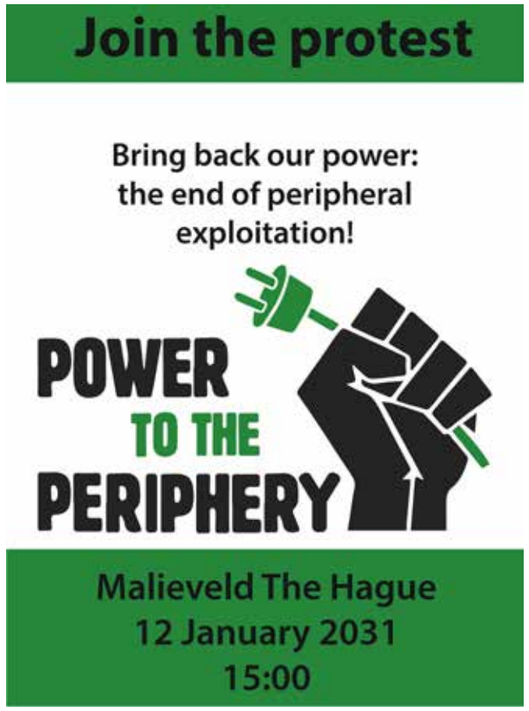


Image 4: Sign calling for protest by P2P movement

The decisive event took place on 15 May 2031. P2P members gathered at the main transmission tower, which connected the grid between Parkstad and Randstad. From their vehicles, they hooked cables to the tower and started to pull it down. As recounted by a P2P member in a radio interview on L1mburg:

“So with a twist of the hand and a foot on the clutch, not only did the transmission tower topple, but so did the dominance of central cities over peripheral towns”.

Image 5: the toppling of the transmission tower by the P2P movement on 15 May 2031.

For almost 24 hours, the Randstad suffered from severe power outages. The action of the P2P spread like wildfire. Following their example, in all peripheral parts of The Netherlands people protested against the energy-gluttonous cities, fighting for equal treatment of the center and periphery. Following a series of peripheral areas cutting off urban centers from energy, the fragility of cities was revealed, likewise their dependence on the periphery. Slowly but steadily, a change of mindset was inevitable: the dominant urban discourse had to give way to the acknowledgement of the importance of the periphery. And that is how the power was given back to the periphery.

Practitioner Profile 1

The Heart is a Lonely Hunter

In 2019, policymaker Eefke Verheij told student Dylan Ahern about her passion for parking – and much more.

“During my study Sociology I had never expected that later I would be occupied with the parking policy of the city of Utrecht. And yes, it is rather funny, because there are few topics that sound as boring as parking policy. Moreover, I don’t even like cars. I don’t drive a car. I got my driver’s license a few years ago, but I rarely use it. I always use my bicycle. Still, this is where my heart lies: engaging with citizens, thinking and analyzing future developments, and coming up with concrete parking and mobility solutions for our city.

After my graduation it was difficult to find a job. But money had to be earned. Through an employment agency I ended up at the parking division of the Municipality of Utrecht, where I started behind the reception desk. From that position I took on different other positions, with the consequence that two years ago I made the switch to policy development. This is what I love doing most, although I am really happy to have gained experience from the practical side: I still know all ins and outs when it comes to parking issues and permits. And that is really useful.

The interesting thing though is that parking involves a lot of emotions. A lot of people – people like me, who don’t care about cars at all – probably think: ‘why does everybody make such a fuss about car policy?’ Still, there are a lot of people for whom a car represents a means to go from A to B, or possesses status qualities, and it can also mean liberty, for example for someone who is disabled. I can remember that once, when we implemented paid parking in a certain neighborhood, a resident handed me a bunch of flowers, because now he did not ‘have to drive in circles for hours in the neighborhood’. At the same time, other neighbors were extremely angry: ‘paying for a parking spot, what are you thinking?!’ All these people live together in the same street, which I think is fascinating. For these reasons I often call with various neighborhood residents, to hear what they need or think is important. Sometimes it’s a good thing to be pulled into the nitty gritty details of people’s street life, literally speaking.

Written down by Dylan Ahern
on 9 January 2019.

For the past half year, I have been working on a new parking policy document. It will entail a vision document in which the main ideas relating to parking policy will be discussed. One of the reasons for the new policy document is that Utrecht is growing rapidly; the previous policy does not comply with the challenges we are currently facing as a city. But there are also new demands with regards to livability and various technological developments, which require a new vision on parking. I work on this not only with colleagues from the municipality office, but also with various scientists, such as urban expert Giulano Mingardo from Erasmus University, project developers and residents. Moreover, many people frequently share their thoughts, ideas and needs with me, helping me to get a better understanding of what is needed and possible.

One of the major challenges is making my work both future proof and concrete enough to make it decisive. It is finding a balance between those two ends that I find the most challenging. Next to that is the fact that there are many uncertainties, covering the future in a dense mist: current technological developments advance in such a rapid pace, that it could very well be that what we think of now, could be obsolete in ten years time, or even shorter. Autonomous cars, sharing cars, mobility as a service, you name it. In other words, we do not know how these possibilities will change mobility in the near future. But the image of what our desired city should look like, will not change as fast. I try to capture those desired images of our future city and take them into account. The last issue is an ideological question, concerning distribution: with space becoming increasingly scarce, who has most right of a owning a parking spot? It is a question to which I personally, or professionally, do not have an answer to – and luckily I don’t have to, that is one for the politicians.

Obviously, I have my own ideas and vision about the ideal parking policy, but that is not something that I just smuggle into the policy document. That would not be possible either: the main ideas are already laid out by the College of the Mayor and Aldermen. But concerning the question how to reach a certain objective, that is something where I can be of use. For example, even though the requirements for being eligible for a parking permit are crystal clear, there sometimes are cases of which I know the current local government wants to have them accepted. For these cases, not just the individuals, but addressing that policy flaw on the whole, I will do my best.

I can imagine that I will stay in Utrecht for the rest of my life. But then I do dream of a city which keeps developing, allowing me to see new and discover new things in Utrecht. For example, currently there are plans to make Janskerkhof and the Oudegracht car-free. I am involved in those plans as well. Obviously, it is a great thing to enjoy the impact of my work in such a personal way, but that is not what it is all about. If the project itself is interesting enough, I can get just as much of fulfillment out of such a job as a car-free Oudegracht.”

Commuting Survival Wear
Source: found in thrift shop ‘Emmaus Parkwijk’ in Utrecht.
Curated by: Rolien de Jong, Margot Visschers, Stella Münninghoff & Koen Faber.

2033

Right to mobility

Imagine that you’re back in the year of 2033. An overcrowded public transport system, so densely populated you can hardly move or breathe, subject to soaring temperatures, extensive delays and violence. Commuters dressed in self-made protective clothing, to survive the dangers in public transport.

Public transport became a hotbed of conflicts in the early 2030s. As people from all social classes had to use public transport and not everyone was able to afford expensive safety outfits, it became common to create do-it-yourself safety commute clothing. All kinds of new, self-made layers and gadgets were attached to clothing to provide more protection and comfort (see figure 1).

Image 6. Self-made protection clothing for commuting.

What happened to make commuters feel the need to take matters into their own hands? In the decades before, major urbanization had taken place in the Netherlands, most significantly in Amsterdam, The Hague, Rotterdam and Utrecht. In and around Utrecht, however, infrastructure in its broadest sense (e.g. housing, transport, waste management), was not prepared the rapid increase of urbanization due to the settling of the Google, Microsoft, ING and ABN headquarters in Utrecht in 2023. Especially the housing shortage was a major problem, causing housing prices to rise with 21% in 2024. Lower income groups could not afford these prices,

and were forced to move to less expensive and less accessible parts of Utrecht, often located further away from the city center. Because of this, people with low incomes generally had lower access to mobility services, according to urban planner Karel Martens (personal communications, October 1, 2017).

During this same period, policies for combating climate change started to affect mobility in Utrecht. In the year of 2026, the Dutch government realized that the Paris Agreement targets, which were set for 2030, would not be reached by any means if policy did not change tremendously. All non-renewable electricity was banned, and rising electricity prices made electric cars almost impossible to afford. Heavy climate taxes on gasoline and fossil-fueled cars forced people to look for alternatives to access work, education, and health care. Many felt severely restricted in their freedom to move.

Image 7. The mayor discusses the experiment 'Right to Mobility Program'.

Obviously, not being able to provide all citizens with access to services to meet their universally agreed upon human rights was a shocking idea for a high-income country such as the Netherlands, and large groups of protesters took to the streets. Seeing this, the Dutch government realized that mobility should be understood as a means to achieve other basic human needs. Due to the wide variety in mobility inequalities and poverty between cities, municipalities were given the responsibility to take action and were provided with funds. The municipality of Utrecht, already facing severe problems related to mobility, decided to experiment with a new approach (see figure 2). In collaboration with other relevant infrastructure parties such as the Ministry and the public transport operators, the municipality started an experiment to make public transport free for a random sample group of citizens, within the boundaries of the city. In this

experiment, access to public transport was reimagined as a right to all citizens, hence named the 'Right to Mobility Program'.

A new wave of perturbations arose in the year 2029, when it became clear that even stricter policies were required in order to achieve the Paris Agreement targets. Based on promising first results from the 'Right to Mobility' experiment and the lack of progress made with previous environmental measures, the municipality of Utrecht, again, dared to take action. The municipality decided to fully ban the privately owned car from the city, while fully implementing the experiment in the whole city of Utrecht. After these policies were up and running, the streets of Utrecht were only used by a few vehicles with a permit to enter the city, including a high number of hydrogen-driven buses. Almost 80 percent of the population of Utrecht felt forced to make use of the charge-free public transport system, as walking and cycling were highly impeded by the many construction projects that were needed for the extra tram rails and rapid transit bus lanes. Citizens felt they were stripped of their freedom to decide which transportation mode they wanted to use to commute.

The experiment soon began to show its flaws, as it had put a large pressure on the existing public transport system. Protests arose almost every day, usually around central nodes for public transport. Traveling by public transport had become an exhausting and frightening activity in Utrecht, and the protective self-made clothing of commuters only aggravated the grim atmosphere.

Looking back to this tumultuous time period, it is clear how difficult it was to suddenly increase accessibility while maintaining safety and comfort in a mobility system under pressure on the one hand, and coping with the fast pace of urbanization and climate change regulations on the other hand. But, it did show what can happen if mobility - as a means to access basic rights and needs - is at stake.

Practitioner Profile 2

An engineer's encounter with corralling sheep
In 2019, the early career policymaker Heleen Payens (29) told student Gustav Thungren about her fresh experiences in the policy environment with building 'warm' relations at the Department of Waterways and Public Works.

I consider myself a person who sets clear goals and then do my best to achieve those goals. However, as I just learned in this job, when it comes to attempt sorting sheep according to their color, some goals are hard to reach. Come to think of it, of late, goal setting has become less straightforward than before in a professional sense, but not less important.

As you may have guessed, I am not a sheepherder by trade, although I did enjoy it. I recently began working as a trainee at Rijkswaterstaat (Department of Waterways and Public Works), an agency part of the Dutch Ministry of Infrastructure and Water Management. Starting my new role in October, corralling sheep was an exercise I did together with fourteen other trainees during a three-day training course in a rural area. We were divided into groups of three, and inside a fenced off area, each team had to corral sheep into different areas and jump over obstacles. It was really fun, but also a good learning opportunity - it had all to do with working together and learning from mistakes. You could look at what the other groups were doing differently and see what impact that had on the sheep – one team even had a sheep break through the pen!

Rijkswaterstaat is different to the places I have worked before. It is a massive organization, with so many knowledgeable people in diverse areas and the projects are big, involving people both internal and external to the agency. This makes work more complicated. An engineer at heart, I graduated in mechanical engineering from Delft Technical University, and worked one year for an engineering company before starting my traineeship. When you work at engineering firms, nearly everything is straightforward: the goals you set, the tasks you do and even the way you talk with co-workers! At Rijkswaterstaat, you need to consider more variables and aspects when moving projects forward – for example, ensure that departments and project teams are coordinated, stakeholders kept engaged and regulations are followed. Sometimes it doesn't work so well. I have noticed cases where some departments are working on the same issues, not even knowing about the work of each other. From my experience, these multiple facets also meant that communication was a bit challenging, because in the beginning I would attend meetings and not know if I, or the other people, had produced any purposeful results. As an engineer, if you are asked to calculate the structural integrity of a bridge during high wind conditions, that is a specific question and it's easy to show results. But how do you show that everyone is equally informed about a process? This is something I am still getting used to as a trainee.

These challenges are translated into my daily work as well. Rijkswaterstaat is responsible for the design, construction and management of both water and road infrastructure and I am involved in a big construction project that seeks to broaden the A9 highway between Badhoevedorp and Holendrecht. This is a large and long-term project: from initial planning to finishing the construction, it will have run for ten years. This requires a large team. In total there are 50 people working on the project, although mainly divided up in smaller teams, with six people in my team. Our common goal is to improve the accessibility to the cities nearby the highway, with causing as little harm as possible to people. This means that there are a lot of meetings to coordinate the project, both within the departments and teams of the organization and with the contractors, local businesses and other people that are somehow involved or impacted by the highway construction. This is where I come into the picture – one of my projects here is to explore and develop a governance strategy for stakeholder relations.

There are a lot of things to consider when you broaden a highway. Some people may have to move from their houses and nearby streets will periodically be shut down, which of course has an impact on both local businesses, schools and neighbors. There are also concerns about noise levels and how long construction will take. With our governance strategy, we strive to develop 'warm' relationships with all these types of stakeholders. This means that people are kept well informed and have enough space and time to give their opinion and share their concerns. This 'warm' relationship is very important. It is essential to be on good terms with each other, especially when unexpected problems arise. When the relation is not so good, and something unexpected happens which has consequences for both parties, it can be hard to find a common way to take care of this and found a common solution.

One governance solution was to open a visitor center. It's a type of exhibition that informs people about the A9 highway broadening. When you walk in, on the floor, there is a Google Earth map of the area, so local people can recognize their own homes. There is a lot of information inside on the building process and other technical aspects, also displayed is a 3D visualization of how things will look in the future. It helps people to understand how they will be affected and how they can be part of the process.

Since I started, I have often been pushed outside my comfort zone. This allowed me to learn new things. For example, I had never worked with the concept of governance beforehand. I suppose if I had to start over, I would start talking to people earlier, rather than reading a lot of documents. Despite the organization's big size, I have found the work culture at Rijkswaterstaat to be open and friendly. Whilst some people run from meeting to meeting, most co-workers and experts are happy to answer any questions you may have and are curious who you are as well. Having said that, it is sometimes hard to find the right person or document here, there is no large database to draw from. However, my project manager and likewise supervisor help by guiding me in the right direction, with unfamiliar concepts or providing the bigger pictures on problems we are facing.
I think that in the end, working here has taught me that regardless whether you herd sheep or write governance plans, collaboration and communication are really important to achieving both your own and common goals."

Written down by Gustav Thungren on 11 January 2019.

Written down by Gustav Thungren on 11 January 2019.

‘How Uber changed my life, twice’

Source: conceived by Julien van Iersel. Curated by: Martijn Gerritsen, Rianne Hadders, Ywenne Kleiss & Valeriya Ryazanova

2036

Platforms to the people

“In 2036 I received a message from Uber, indicating the end of my Uber driver career. Looking back, that message is absolutely pivotal to how we realized cooperative mobility,” says Julien van Iersel on the first page of his best-selling autobiography How Uber Changed My Life, Twice (2048). In his book, the current Mobility Coordinator of Rotterdam reflects on key events in his life, linking them to the drastic changes in platform mobility services that occurred in the Netherlands in the last few decades.

Julien’s first professional experience with platforms was in 2017, when he started working for Amazon and Uber. He took up several of what were then known as ‘gig-economy jobs’: performing online micro tasks, charging electric scooter batteries, and delivering pre-ordered food. In 2024, he started to work as an Uber driver, attracted by the freedom and flexibility this job offered. Rather than having a strict schedule, Julien could decide when, where, and for how long to work himself. However, this also implied that he was not employed by Uber: “I had to apply as a Freelancer at the Dutch Chamber of Commerce in order to be eligible as an Uber driver, which meant that I was not insured, had to pay income tax, and had to take care of my working materials all by myself”, Julien reflects in the second chapter of his book.

“Breaking my arm in a cycling accident in 2026 left me unable to work, and made me realize how vulnerable I was without insurance in the on-demand platform economy. I decided to use my healing time to read up on and investigate the phenomenon of cooperative insurances such as the Dutch ‘broodfondsen’,” Julien recounts on page 102. These cooperatives showed how people organized themselves independently, sharing insurance responsibilities. Julien then realized that this cooperative approach might be useful in organizing mobility as well. He drew his ideas from Nick Srnicek’s book on Platform Capitalism (2017). This book described the idea of online platforms organized in a collective way: they would be owned and controlled by the people of a neighborhood, for example. To Julien, this idea seemed to have potential to rule out the monopolistic tendencies he saw with large corporate players such as Uber.

For Julien, 2036 was a turning point in his life. With a matter-of-fact message Julien and many other Dutch drivers lost their jobs at Uber. “Even though I already worried about autonomous cars taking over my job following the UberAutonomous launches in 2032 in San Francisco and Singapore, I couldn’t believe the impersonal tone. Especially after my 12 years of

dedicated work! It infuriated me that they dared to welcome me back as a ‘customer’ without any form of compensation,” Julien says in chapter 6. Julien and fellow unemployed Uber drivers protested at the launch of UberAutonomous by hindering and damaging Uber (and other) vehicles, severely obstructing the transport system of Rotterdam. The group wanted to make the detrimental effects of this kind of monopolism clear to Uber and the Dutch government. Some consumers joined the protests as they realized the gravity of the situation and were concerned about the unemployment of the people they had relied on for years. Together, they built the so-called Co-operaction protest movement.

Image 8. Graph from the Central Bureau of Statistics report On the rise of the automated vehicle (2038) reflecting the drastic drop in the number of Dutch Uber drivers in 2036.

Led by Julien, the protesters lobbied for locally owned, bottom-up, and shared mobility platforms through which communities and neighborhoods themselves could take decisions on mobility issues. Eventually, the government and the Co-operaction protesters negotiated a compromise, highlighting the importance of a financial and agency compensation scheme: to be in charge of choosing how and with whom to travel, without being dependent on ‘black-box’ algorithms designed by a private company deciding on people’s possibilities. This led to the collective creation and realization of the cooperative mobility plan and a transition from Public-Private-Partnerships to Public-Collective-Partnerships. Close coordination with municipalities in Public-Collective-Partnerships would provide communities with much-needed support to buy vehicles (bikes, scooters, and cars). Currently, the Co-operaction approach is broadly supported by local authorities throughout the country, increasingly replacing Uber’s algorithm-driven mobility solutions.

In order to realize this transition, Julien was elected by the municipal government as the Mobility Coordinator of Rotterdam in 2047. He now closely oversees the transition towards cooperative mobility and multiple neighborhood-coordinated platforms. “We wanted people to have a say and a right to organize themselves as they wish because we knew how important it was to embrace the differences in people’s lifestyles and desires,” emphasizes Julien on page 194 of his book.

Image 9. Cover of How Uber Changed My Life, Twice (2048), for which Julien van Iersel received the Best Debut Award.

The Clash to Zero

Source: a gift from protest group ZERO-KMH in 2045.
Curated by: Sharné Bloem, Winnie de Jong, Romain Morin,
& Ilse van der Werf.

2039

Battle over the highway

On the 25th of May 2039 traffic jam occurred which lasted the entire weekend. The first few hours it remained unclear what was causing this major disruption. Not knowing what had happened, people got angry and scared. After a few hours, the radio news finally gave some clarification. The traffic jam turned out to have been caused by a protest group named “ZERO-KMH”, which demonstrated against the ownership of cars in consideration of a better future.

Twenty years before, on December 12th of 2015, world leaders came together for the twenty first edition of the United Nations’ Conference of Parties (COP21) in Paris. They reached an agreement to limit climate change and to accelerate both actions and investments needed for a sustainable low carbon future by 2050.

Meanwhile, cities, representing the action’ scale closest to citizens, acquired a prominent role in sustainable solutions. In 2016, Utrecht, as the fastest growing city in the Randstad, became the first mover implementing the European Commission’s Sustainable Urban Mobility Planning (SUMP) framework for 2020 (Gemeente Utrecht, 2016). With that, the city aimed to consider the future more than the present. Given the lack of support from European States, cities had progressively turned towards pan-European solutions as a shortcut for global solutions to sustainability issues. Standing as a leader among European cities in becoming greener, Utrecht’s new mindset led to practical implementation processes. Larger use of local resources, softer means of transportation and redistribution of public spaces enabled a much better perspective for the city’s sustainability. In the early phases, focus was put on the acceleration of certain trends, including more room for pedestrians and new public transport hubs; increasing bicycle networks with fewer stops; strongly limiting the space available for cars; and very low speed limits for cars around urban areas. Soon after, in 2020 Rotterdam followed by adapting to the SUMP framework ensued by Amsterdam and The Hague so that by 2025 all four main cities of the Randstad adapted to the SUMP framework. In the meantime, since the movement spread nationwide, Eindhoven and other smaller cities committed themselves too.

However, part of the population was still holding on to their privately owned cars; the ultimate symbol of both freedom and private property. Because the policies implemented banned their car from cities in the Randstad, car owners were forced to move to suburban areas or smaller cities. This had a dramatic effect on congestion. More and more cars were stuck in congestion and the commuting time kept expanding. Despite the rise of e-cars, still not numerous enough, it also affected the air quality up to the point where people were forced to start wearing gas masks.

At the same time, urgency of general awareness towards Sustainable Development Goals (SDGs) became more and more important in the Dutch education system, from primary schools to universities, reshaping the mindsets of the new generations. From that, three main struggles emerged and drove the mindset change. Firstly, air pollution in the cities became unbearable and sparked necessary action. Secondly, the students were tired of the government being so reluctant about global warming. Lastly, new generations lost interest in owning cars. By 2031, a "ZERO-KMH" social activists group started demonstrations through guerilla protests, using graffiti signatures to tag highways and parking areas (see Photo 1).

Image 10: ZERO-KMH's graffiti tag on highways and parking areas (Source: Sharné Bloem).

Their movement was mainly inspired by actions conducted in the past by Frank van Schaik, a Dutch activist who did several campaigns by himself (see Photo 2). With his first campaign in 2018 he already reached national television when he replaced a 3 of a 130 km/h signs on the highway with a 0 so that the sign looked like a 100km/h sign in order to reduce air pollution (NOS, 2018). After years of marginal activities and an increasing awareness among the general public, the movement got more important over the years. The group used street art for positive messaging; causing self-induced traffic congestion in the middle of the day but also conducted some isolated violent acts, vandalizing cars in more derelict parking areas. ZERO-KMH's main aim was to change the mindset to favor the well being of future generations over that of the present one, and the protests were their means to reach this goal.

The apogee of protests was reached in 2039 when, after months of planning, the "ZERO-KMH" group came up with a more radical plan. On May 25th, many students from different universities took part in causing the biggest traffic congestion ever to be experienced in the Netherlands. They drove against one-ways, against traffic on highways, created fake breakdowns and in general just caused chaos. Within a few hours, more than 4000 km of roads were gridlocked (see Photo 3), and the matrix signs showed a speed limit of 0 km/h. This day marked the starting point of a clash between groups with different and opposing mindsets (see Photo 4).

Image 12: Live Traffic on 25 May 2039 (Source: Sharné Bloem).

Image 13: Breaking News, a traffic gridlock in the Netherlands (Source: Sharné Bloem).

As a result of the protests, and of the progressive policies already implemented by municipalities, the national government ended the talks about privately owned cars and definitively forbade private car-ownership in the Netherlands. The 15th of July 2039 became the historical day after which purchasing a privately owned car was forbidden, even though its use as a means of mobility had been planned only to end by 2045. Reducing the national vehicles fleet in favor of a more agile multi-modal system and guaranteeing an increasing share of zero-emission cars, this new law appeared to be very relevant to face the issues of the time. The "new" mobility concept, then implemented in the whole country, offered something much better than owning your own car. Among a set of various other solutions, the change manifested itself in the form of a mobility hub, as is known today, a more comprehensive digital and physical platform where no more privately-owned cars are allowed, and sharing is encouraged, as well as softer mobility means.

Practitioner Profile 3

Dealing with the outside world

In 2019, senior policy maker Diana van Altena met up with student Justien Dingelstad on the twentieth floor of the tower of the Ministry of the Interior and Kingdom Relations and told her about her experiences inside and outside the Ministry.

Written down by Justien Dingelstad on 11 January 2019.

Luckily I do not have to be here often. I prefer to be on the road, in the cities where the things we work on are actually happening. I would recommend everybody working in this tower to do the same: get out once in a while to see and experience the cities undergoing change. I think that fits the way I like to work, using my imagination and bringing people together to work in a creative and positive way around shared issues.

I currently work for the unit City and Regions, in which I mainly focus on the city deals within the National Urban Agenda. My work is a bit different from that of the average policymaker: I bring together stakeholders to facilitate multilevel governance on urban issues. Using novel and creative techniques, I connect the 'right' partners - such as governments, municipalities and NGO's - and stimulate them to share knowledge on how to overcome shared issues. I also do the same on the European level, in the Urban Agenda for the EU.

One example of such a novel technique to bring people together is the organization of the 'Day of the City', which is the main thing for me besides my activities for the Dutch and EU Urban Agenda. At first, the idea was to organize a small festive closing event for a project. My team put out a request amongst the partners of the ministry (urban partners such as the G4 and the G40, other ministries, NGO's, research and science institutions) to join the event and bring in themes for discussion. This resulted in a staggering 900 applications with loads of suggestions and potential contributions for the program of the event. This showed that a 'small' event would not be sufficient, so the idea came up to organize an annual, one-day festival called 'The Day of the City'.

We decided the core concept of the festival would be a day for about 1400 policymakers, NGO's, scientists and other professionals to network and gain new ideas, but from a specifically positive, creative and future-oriented angle. The festival is therefore deliberately not about the challenges of urban areas, but has a distinct positive approach: how can we work together to create 'good' futures for our cities? The whole festival had to fit this core concept. For the first edition in 2017, which took place in a former industrial site in Utrecht we therefore clustered the 900 applications into fourteen overarching themes, each with its own 'meeting room' in an inflatable dome, which were spread across the open hall. This made the day dynamic by allowing people to walk from dome to dome and thus from theme to theme. For the second edition in 2018 in Amersfoort, we used venues that were very different from regular meeting rooms, but that consciously matched the festival themes. For example, the theme 'urban sustainable food production' was discussed in an actual urban restaurant and greenhouse where sustainable food is grown.

I already touched upon the fact that my work is different from the 'average' policymaker. This is reflected in the tasks my team performs for the organization of the festival. We determine which trending themes in the urban domain will be discussed, who will be speaking and how the event will be financed. But most importantly, we think about the streamlining of the day, making sure that there is a good 'flow' and that people are well engaged. Our aim with the festival is on the spot learning by face-to-face interaction, sharing insights, offer experiences, stimulate knowledge exchange, and especially to facilitate new connections between people to arrive in the near future at topic transcending urban solutions. In my opinion, creative and entrepreneurial people enjoy and execute this job well. If the production of a policy report is your thing, organizing this event might not be for you

Overall, I enjoy the organization of the festival a lot. I especially like learning about all the new and creative initiatives on urban governance that are out there. However, I'd say the main challenge that comes with bringing together all these innovative initiatives is that with 900 applications from all over the country, we simply cannot put everybody on the stage. We have to say 'no', which is the hardest part of my job. For example, sometimes people perceive their own ideas as highly innovative, but as we as at the ministry have a national overview, we know that there are other, similar initiatives out there that are already a lot more developed. As a solution, we try to connect these similar initiatives, from which one is a bit ahead of the other, in the pre-stage of the festival. In this way, people can learn from each other even before the festival, and then present their initiative together on the festival itself.

Bringing together so many different initiatives and stakeholders also results in a challenge when it comes to the assessment of the impact of the festival. As I explained, the goal is to bring people together to spark new ideas and possibly partnerships. However, it proves quite hard to find out if this actually happens. Of course we send out a standard evaluation survey right after the festival, but this provides feedback like 'I didn't like the sandwiches' or 'It was too cold'. This does not show the long-term effects. What we really want to know is what the effect of the festival has been on the participants, say maybe half a year later. What have participants learned? Have they been triggered to think in a more creative, positive and future oriented way? Are new initiatives and partnerships born?
In line with whom you want to and whom you can invite to the festival and how to create impact, another challenge is citizen involvement. This has been a goal ever since the first edition but needs more attention to be developed further for the next edition. We want to involve citizens, but as the ministry works on a national scale we are dependent upon third parties such as municipalities to reach out to citizens. Leaving this high tower as often as I can, hopefully I will be able to overcome these challenges and bring people together around a positive future.

‘End of Driving’

Source: donated by the Municipality of Amsterdam, curated by: Dylan Ahern, Eloisa Vittoria Menguzzo, Eva Koolbergen & Pam Wijk.

2042

Rise of immobility

In 2042, the Dutch government introduced a radical campaign; all Dutch owners of a driver’s license were requested to submit and discard their driver’s license before the 23th of February 2042. If the they handed in their license in the first 6 months of the campaign, they received a refund of 2000 euros: equivalent to the average costs people had invested in their driving lessons. The campaign was strongly related to the severe decline in mobility in the preceding 15 years. What was the reason of the decline in human mobility? Which developments led to this groundbreaking occurrence? From 2020 and onward, various developments resulted in the downfall of driving.

The changing labor-market

Since 2020, automation and robotization increasingly developed into main drivers of change for the global labor market. Firstly, and familiarly, advanced technological mechanisms in the industrial sector led to the replacement of human labor in heavy industry; automated robots worked faster and more efficient than humans. However, this time the job-takeover was not only limited to the industrial sector, making it more disruptive than previous industrial revolutions. Highly complex artificial intelligence and concomitant machine learning led to further automatization of the labor market. Accounting, administering, but also more complex activities, such as reading X-Rays and customer preference optimization were taken over by computers. It turned out that even highly cognitive activities, such as making tacit judgments, sensing emotion, or even driving— activities that used to be considered too difficult to automate successfully, became automated. These developments had a severe impact on the human-labor market; more and more people were replaced by robots and the competition for the remaining human- jobs intensified.

Meanwhile, the consumer-experience-industry launched increasingly advanced virtual reality (VR) glasses from 2014 onwards. A later important breakthrough was the move from High-Definition (HD) to High-Experiential (HE). With the new technologies, one could visit the top of the Eiffel-tower in a 4D experience (figure 2), order food, and communicate intimately with one’s colleagues, friends and family, without leaving his/her favorite chair in the living room. The drastic consequence was that people stayed at home more than ever. While robotic mobility saw a surge, transporting food, clothes, cargo, materials, human mobility, for the first

time in history, saw a decreasing trend.

Image 14. Virtual reality glasses became part of people's daily lives since the 2030s

Unemployment

The increase in socio-economic inequality due to changes on the labor market, resulted in growing dissatisfaction amongst the unemployed population. Demonstrations were commonplace. In 2035, after much debate, the Dutch government responded with introducing a universal basic income (UBI) of 1000 euros a month. Most of the manifestations lost momentum as a result of this implementation; the Dutch unemployed were guaranteed a monthly income.

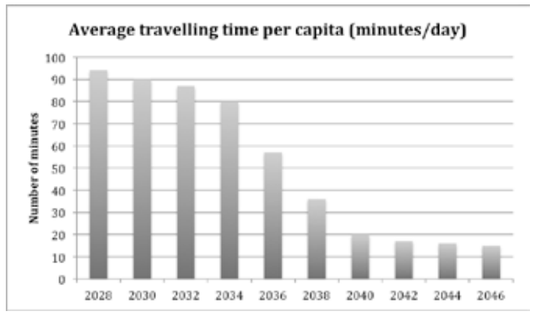


Image 15: Average travelling time per capita in the Netherlands. Source: CBS, 2049

However, the introduction of the UBI had unintended consequences. Due to the implementation of the UBI, numerous people did not feel the immediate need to search for work. Also, the employed started to work less and enjoy more leisure time. But instead of travelling the world, doing community work or other activities outside the house, the great majority of people spent most of their time inside their house, within HE reality. An unprecedented phenomenon took place; people did not travel more, but less (see figure 2).

Even those that wanted to go outside for a run at the park for example, would stay in the surroundings of their home; there was no need to go outside for sports, as most of the sportive activities would be performed within HE reality (see figure 3).

Image 16. Example of HE experience:
travelling to Paris as a robot from within you own house

Transformation of physical surroundings

Due to a drastic decrease in use of public and private transport, the transportation system of the Netherlands did not fit the current demands of its users anymore. The A2 five-lane-highway between Amsterdam and Utrecht was only used by automated vehicles (AVs) that drove 'nose-to-bumper' and only took up one of the five lanes.

Within the Dutch cities, changes occurred as well. In Utrecht, bus stops and train stations disappeared. Bakeries and other shops that demanded the physical presence of consumers gone out of business, as most people ordered food from inside their house. With very few people on the streets and a growing automated transportation system, road signs also lost their function. Nonetheless, the physical nature of Utrecht did not change overnight. The first cracks of the decline in human mobility were seen in a growing vacancy of shops up to a point where more than 80% of the store premises were empty. Restaurants and supermarkets were next and gradually the food delivery services grew bigger and bigger. Finally, mobility services fell.

A drastic arrangement

This nation-wide increase in immobility resulted in many marginally used roads and highways. In the early 2040s, the remaining human driven-vehicles posed a serious safety threat due to numerous traffic accidents between human driven-vehicles and densely driving autonomous vehicles (AVs). The European Union started a debate about the abolishment of human driven-vehicles and the transformation of the European infrastructure towards exclusively AV-proof. Highways would be transformed from four or five lanes to one, and the remaining space could be used to realize valuable functions, such as housing. However, this negotiation would take numerous years and the Dutch national government felt the need to react on a faster basis because of the many accidents.

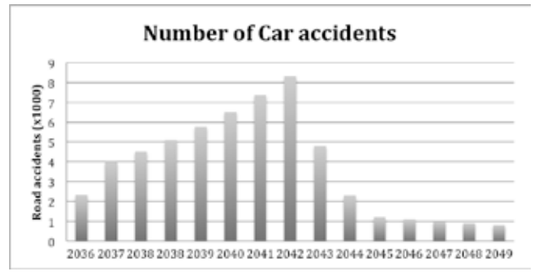


Image 17: Number of car accidents in the Netherlands. Source: CBS, 2049

In 2040, the government started to think about an attempt to abolish the human-driven vehicles on the Dutch roads, with the expected European law in mind. For a six-month period, starting August 23, 2041, Dutch citizens with a driver's license had the chance to hand in their licenses with a refund of 2000 euros for the costs of their license. The policy turned out to be a huge success, as the number of car accidents plummeted when human-driven vehicles were taken off the road (see Fig. 4). The box displayed in the exhibition is one of many which were installed in city halls throughout the country.

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