

# Werk maken van mobiliteitsgeluk



Stephanie Hughes – De Verkeersonderneming – [stephanie.hughes@akkaarchitects.com](mailto:stephanie.hughes@akkaarchitects.com)  
Anne van der Veen – Over Morgen – [anne.vanderveen@overmorgen.nl](mailto:anne.vanderveen@overmorgen.nl)

## **Bijdrage aan het Colloquium Vervoersplanologisch Speurwerk 21 en 22 november 2019, Leuven**

### **Samenvatting**

In de afgelopen jaren is er steeds meer aandacht gekomen voor vervoersarmoede en rechtvaardigheid in verkeer & vervoer. Met deze bijdrage willen wij de discussie van theorie meer naar praktijk brengen. Hoe kun je er daadwerkelijk mee aan de slag? In dit paper stellen wij dat veel meer bereikt kan worden door het perspectief van individuen meer mee te nemen in beoordelingen en beleid. Welke reisopties hebben mensen nu daadwerkelijk, hoe kunnen we die verbeteren en vergroten we daarmee hun 'mobiliteitsgeluk'? Om werk te maken van mobiliteitsgeluk bespreken wij twee concrete aanpakken zien – een datagedreven aanpak bij Over Morgen gebaseerd op de theorie rondom vervoersarmoede, en een aanpak gericht op het gedrag en de beleving van individuen met de Mobiliteitsgelukstest van de Verkeersonderneming. Met deze voorbeelden hopen wij anderen te inspireren om ook aan de slag te gaan.

## **1. Introduction**

At the most fundamental level, what people want from transportation is for it to make their lives better. Transportation can provide significant, permanent and daily improvements to people's lives, giving them access to new destinations or reducing the time and cost to get from A to B.

However, these transport benefits are not always equally distributed over people and places. Decades of unequally distributed transport benefits has led some areas to prosper and benefit much more than others. Current planning practice does not take these effects into account. Worse, as Karel Martens (2017, 2019) and others have pointed out, there are inherent flaws in the way transport policy is done that perpetuate inequalities. For example, the bus lines with low, stagnating or declining ridership numbers are often the first to be cut to make a public transport system more cost efficient. This reduction in service will however also lead to fewer passengers, which can then be used as a reason to cut those lines down even further, a vicious cycle that is very hard to beat. In the worst case, it can lead to people being unable to transport themselves - as the KiM has shown, one in five people using the 'thinnest' bus lines have no other option (Zijlstra et al., 2017). It seems that the more people depend on transport options, the less they have of it.

Mobility has the potential to contribute positively to people's lives, connecting them to the places and the people they want to visit and contributing to their general happiness. Conversely, the lack of mobility can also hold people back limiting their opportunities and hindering them their entire lives. In recent years, there has been a growing interest in both science and practice to understand the latter and not just focus on the former. There are varying terms and definitions used, with 'vervoersarmoede / mobiliteitsarmoede' ('accessibility/mobility poverty') being the most common term, and 'transport justice / equity / fairness' the more neutral academic term used (See Lucas, 2016 for an academic overview).

With this paper, we want to contribute to the discussion in two ways. Firstly, we want to explain why we think policy related to transportation should take the perspective of individuals more into account. We believe this is the key to maximize quality of life improvements in transportation, and indeed the key to maximising how mobility can contribute to people's happiness, a concept we call Mobility Happiness, or 'mobiliteitsgeluk'. Secondly, we want to provide two concrete ways to move forward with this topic towards solutions. For this part, we share our experiments and experience bringing this idea into practice at the Verkeersonderneming and Over Morgen.

## **2. On Perspective**

The goal of any transport policy is to change behaviours for the better. To make good choices in this regard, we often take a good look at the facts that current behaviour results in. One person's tram commute becomes a set of check-in and check-out records. Another person's driving is measured with road induction loops, adding onto the road counts for that day. Behaviour becomes facts. With those facts we then try to model

and, ideally, predict that behaviour. The road counts are used to calibrate a traffic model, the check-in data is used to adapt tram schedules and capacities. Revealed preferences (=behaviour) lead to facts, which are then used to better suit transportation to the revealed preferences.

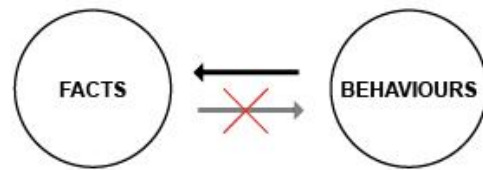


Figure 1: Facts vs. Behaviours

The assumption being made too often is that the facts are all you need to change behaviour for the better. While behaviour leads directly to facts, the reverse is not necessarily true (see Figure 1 on the right).

Because of this, the facts simply do not show the full picture. Trips that people wanted to make, but couldn't or didn't, never show up in the data, and are thus easily ignored in the decision making process. The problem is more pronounced with 'kwetsbare groepen' (vulnerable groups), who often have less resources (time, money, or capability) to travel and thus have more trips they want to make, but can't. This invisibility is a reason why 'vervoersarmoede' is difficult to fix - it's a problem of behaviour that's *not* there, that can't be measured and put into data.

To get a grip on it, then, we need to look beyond just facts. Besides facts, there are other important inputs to our behaviour, such as experiences, beliefs, and expectations, that shape our behaviour. In other words: we understand the facts through the lens of perception (see Figure 2 on the right). This altered understanding of the facts is what drives our behaviour.

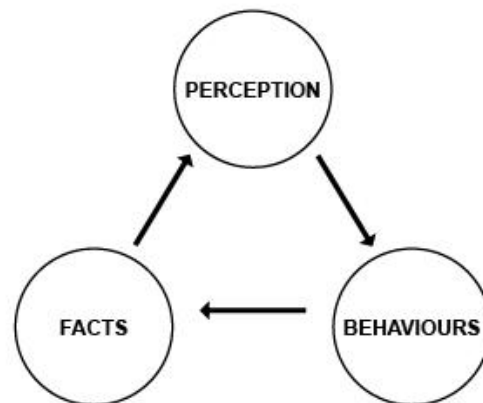


Figure 2: The behavioural loop

By better understanding the perception of actual people, we can find reasons and patterns of those trips that aren't made, of the transport needs that are not met with the current transport solutions. To get the full picture we thus need to take the perception of transportation of people into account. Once we have a better understanding of what actually motivates people to travel (or not to travel), we can provide better mobility solutions that serve people's needs more.

We want to present two different ways of including perception in transportation planning practice; one on the relation between facts and perception, and one on the relation between perception and behaviour. The first is to use the available facts to analyse accessibility on a very granular level. It is a fact-based approach to measure and quantify transportation in the way that people experience it, based on the work of Martens (2017) and the author (Anne van der Veen), which has already been used at Over Morgen to consult on regional 'vervoersarmoede'. The second approach is to understand perception better by starting from people themselves and understanding how their mobility affects their quality of life, from their own perspectives. In order to measure the very contribution of mobility to happiness, we (de Verkeersonderneming) have developed the Mobility Happiness test or 'MobiliteitsGeluksTest'. Both will be discussed briefly.

### 3. Two ways forward

#### 3.1 Perception and the facts: measuring 'vervoersarmoede'

What do people care most about when it comes to transportation? The most important value is not "how far can I go", it's "what can I get to". Yet our planning practice is centred around the former; it is all about increasing travel speed and reducing congestion, and not about what that speed and time actually gets us to. People make decisions about transportation based on the available options to them: which destinations can be reached within a reasonable amount of time with the modes of transport that they can and want to use? Accessibility indicators can help us understand the decisions people actually make, which is why we advocate for using them more in planning practice. An often used example of an accessibility indicator is the amount of jobs that can be reached within 45 minutes from a neighbourhood.

An important assumption that is often made in practice is that each traveller is the same. As the example from the introduction shows, this is not necessarily the case. Even people living in the same building might not have the same options available. Having a car at your disposal, for example, makes a very large difference in the amount of jobs you can reach in 40 minutes. So a distinction can, and should, be made between people who have a car and people who use public transportation. And it's not just the availability of the mode of transport; not having enough money and experience to use the mode of transport also influence accessibility, which in turn influences behaviour.

How then can we use these notions of accessibility to improve planning practice? As we mentioned in the introduction, transportation has the problem that it can limit people. Martens (2017) and others have suggested to think of "vervoersarmoede" as *insufficient accessibility*; in other words, there are not enough options available to people (or to groups of people) and this limits their behaviour. For example, due to a poorer bus service, people might lose access to jobs, and this can fall below a critical threshold of insufficiency. Transportation can provide the most benefit when it helps the people who are limited the most.

However, we do not think that transportation should make everything accessible to everyone all the time. Land use, after all, can just as easily be the problem of accessibility issues; if someone can't get to a hospital, this can also mean that there are not enough hospitals or that they are poorly located. Another important nuance is that the number of people affected or limited should be factored in. If a thousand people fall below the threshold of insufficiency in one place, this is more important than three people falling below such a threshold in another place.

In the paper that I am working on with the TU Delft, and in a few instances at Over Morgen, we have made these theories concrete by formalizing and calculating accessibility and the number of people that fall below chosen thresholds. For example, for the region of Noordoost-Brabant, Over Morgen was asked to assess regional mobility. One of the analyses we did was to calculate the number of people who fell below an

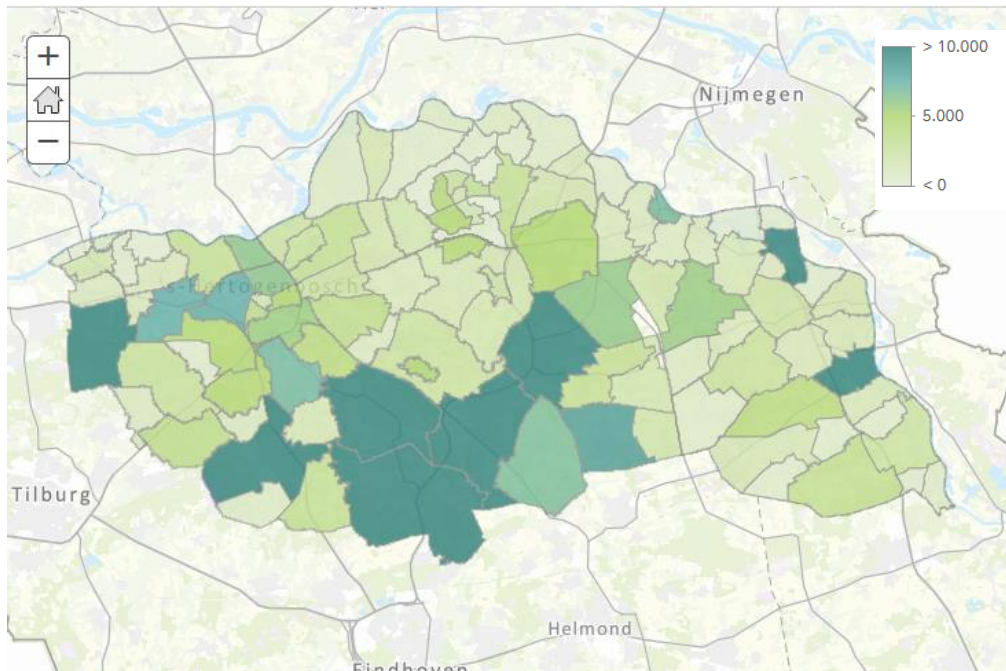


Figure 3 - Measuring 'vervoersarmoede'

agreed upon standard of accessibility to jobs within 45 minutes by public transit alone. This can be seen in Figure 3.

While the analysis can be improved, it showed that we can map the perception of transportation (how many jobs can one actually *get to*), and that it can be used in transport planning. We think it can provide a good quantitative tool in a toolbox for policy surrounding accessibility and 'vervoersarmoede'.

### 3.2 Perception and behaviour: applying Mobility Happiness

Mobility Happiness is the mission we have at the Verkeersonderneming to enable Mobility to effectively contribute to a better quality of life for everyone. That holistic quality of life, we call Happiness. The question we asked ourselves was: How can transportation create a better quality of life for people? How can mobility increase happiness amongst citizens? To approach this question, we first need to know what makes people happy.

Numerous research has been done throughout the world concerning Happiness and what makes people happy. While different things make different people happy, there are a few specific things that make every human being happier. Those are: 1) social relations; 2) health, 3) Personal development, 4) community, 5) freedom, 6) environment.

A person's mobility influences each of these aspects, therefore affecting people's happiness. That is why we believe mobility is a means to live a more meaningful and happier life, and why we call this concept mobility-happiness ('Mobiliteitsgeluk'). With mobility-happiness we urge to look beyond traffic jams and cost-benefit analysis and consider the social and cultural effects of mobility.

How can we contribute to increasing mobility-happiness and how do we quantify such a 'social return' on investment? That is where the Mobility-Happiness Index comes in. It is an index designed to quantify the effect of mobility on people's happiness. The index's results provide practical insights into people's context and mobility behaviour. We use this to directly engage different stakeholders in pilots and solutions that can make a difference.

In Rotterdam mobility is constantly being improved. However, there is a blind spot. We usually only look at what is happening on the road, therefore missing the people that have no access to the road and suffer from a lack of or limited access to mobility. From our first test using the Mobility-Happiness Index, we have extracted preliminary yet very interesting results:

- 67% of the respondents with long-term health problems experience regular difficulty reaching healthcare facilities.
- Among the respondents who earn less than €20,000, there are relatively more people who walk to family/friends compared to the other income groups (12%).
- Considering the respondents that have work or follow a study, the higher the income the less likely they are to cycle or walk to work.
- 42% of the respondents that indicated health reasons not to travel, state that they are lonely and do not see friends/family enough or at all. 79% of the respondents that indicated health reasons not to travel, are dependent on others for travel.
- 55% of the respondents are very concerned about air pollution.

Because we believe that a happy citizen is an engaged citizen and that that is the most sustainable form of citizenship, we aim to create a first measurement of Mobility-Happiness for the city of Rotterdam in 2019. The [test is already created](#), and gives you a score of mobility-happiness.

We aim to use this as a benchmark for future policies; once we know what the current state is, we can use the test after changes are made to see their impact on the actual mobility-happiness of people. For example, we are experimenting with specific mobility solutions aimed at improving the mobility-happiness of those that are currently most limited in the region of Rotterdam. A good example of that is the Fietsenbank: in the neighborhood of Feijenoord, bike ownership is the lowest in the Netherlands. Owning a bike contributes a lot to someone's accessibility, so we are giving away bicycles to those who need it. (Verkeersonderneming, 2019).

We aim at measuring the extent to which mobility contributes to the happiness of citizens in the Rotterdam region, by creating a zero-measurement in 2019. This measurement will lead to key insights that we aim to share with policy makers, governments, mobility providers, social institutions and other parties to enable them to contribute to making citizens' lives better by providing better transport policy and services. We will use those

insights ourselves as well to engage in projects, pilots and experiments to increase people's Mobility Happiness. The measurements will be repeated every 3 years to track the effect of pilots and actions taken by all as well as to understand the overall trend of Mobility Happiness.

#### **4. Conclusion**

The goal of these two approaches is to complement the already existing approaches and together inform mobility policy, services and initiatives. We hope the examples given allow the discourse surrounding 'vervoersarmoede' to go from a theoretical discussion to a practical one. Which groups of people are limited the most in their mobility? What can we actually do to incorporate the perspective of individuals more? And which transportation solutions will actually contribute most to individual's mobility-happiness? More experiments and practice will be needed – these are difficult questions that we do not claim to solve.

#### **5. Referenties**

Lucas, K. Mattioli, G. (2016) *Transport poverty and its adverse social consequences*. Proceedings of the Institution of Civil Engineers (ICE).

Verkeersonderneming (2019) *De Fietsenbank Rotterdam: Iedereen een fiets!* Zie: <https://www.verkeersonderneming.nl/fietsenbank/> en <http://www.wijkcooperatie.org/nl/diensten/fietsenbank>

Zijlstra, T. Bakker, P. Harms, L. (2017) *Reizigers in de haarvaten van het openbaar vervoersysteem*. Zie: <https://www.kimnet.nl/publicaties/papers/2017/11/23/reizigers-in-de-haarvaten-van-het-openbaar-vervoersysteem>