

# She Drives Mobility 42 - Auke Hoekstra

Katja (Introduction) (0:16)

Hello and thank you so much for tuning in. My name is Katja Diehl and I'm hosting the podcast She Drives Mobility for a better future mobility regarding climate-friendly and diverse, kind of matters, because I think that car mobility is over, not the car as itself, but I think we don't need to drive private cars in the future. So I try to nudge solutions and try to change the behavior of people regarding the mobility. Today I talked with Auke. Auke is working in the Netherlands as a professor also and I think I follow him for years maybe, but in the recent post I just saw at Twitter that he was really astonished how unable we Germans are to see a future of electric-driven cars and he thought that Germany is maybe the impactful fake news delivery regarding electric cars and also regarding to change mobility behavior also like depending on cars. I really had a nice and also emotional talk with him. We talked about the future, we talked about how we see city and society changing and which kind of topics are also touching our mobility behavior. So if you like this episode, feel free to leave some reviews, to leave some stars, to leave some money also because I'm doing this pro bono and on my Twitter profile you can see where you can spend money for me. It's like a steady profile or via a PayPal link. But now I wish you all the best, stay healthy and enjoy my talk with Auke.

Katja (2:14)

I'm really proud to have you here in my kind of life podcast forever because I followed you for such a long time and I was thinking that

sometimes we need a preacher from another country here in Germany because people are very avoiding to change into electric mobility. We are having so much fake news around us here but first I would like to ask yourself to have an introduction to the audience please.

Auke (2:46)

Okay, so very quickly, I think I have a background in public administration. I did large internet projects for 25 years. But 13 years ago, I thought, I want to do something meaningful in my life. So I took a sabbatical in order to find out what it was, because I didn't know. And I found that solar, winds, batteries, and therefore electric vehicles, all were changing very predictably, and basically very fast, even though you don't see it at the beginning. But if you use a logarithmic scale and graph it out, it's basically a straight line from 30 years ago to until now, more or less. And I thought, this is super interesting, and I should accelerate this very good change. So that's what I'm doing. And I was employed by, for example, a grid operator for a while, who paid me to be a strategy consultant for four years, you know, electric vehicles, what will happen to our grid when they come online, et cetera. But now for about six years or so, I work at the Technical University of Eindhoven, where I'm a researcher. I still get my money, by the way, from all kinds of consultancy jobs. For example, modeling neighborhoods, that sort of thing, where 100% renewables is implemented. And last year, I scored a big program. 35 researchers will be working the next five years on basically what I was researching before I started, before I was with 35 others. So now I'm ready to scale up, basically. So I research, basically, this move from fossil fuels to renewable energy,

and electric vehicles are my sort of pet project within that. I wrote my first book about it in 2008, and I think they're a really important puzzle piece in the whole Energiewende, basically.

Katja (4:41)

I asked my audience at Twitter what they would like to ask you, so I don't have any personal questions at the moment. But the one that was asked very often was, is there any country regarding fake news to electric vehicles like Germany? Do you ever have such an impression of a country? Because we are centered in the auto industry. We are like Schlüsselindustrie, really important, and we are avoiding to get electric. What is your kind of outer view of Germany?

Auke (5:19)

I think it's true. I don't have an exact opinion. And, there's other countries, where cars are made, of course, like, Japan, Italy, France, and Spain, and I don't speak those languages. So maybe I'm missing out, but I do get the impression that there's a lot of people who really love their rich history, which is very remarkable in terms of combustion engines, and they are not happy that people tell them that combustion engines have to go. So they find out that they write all kinds of, well, I think not very well researched stuff to prove that a diesel engine is here to stay, but it's not.

Katja (6:11)

It was ten years ago when Chancellor Merkel and the auto industry in Germany were saying there will be 1 million electric cars driving in 2020, which is now. And I think we missed this game. For me, it's always the question, how did that come? How did we pass by all the

time and don't have the rush to enter in a kind of transformation?

Do you have any opinions about this?

Auke (6:46)

Yes, if you study innovation science, and this is the department I'm working with most at the moment at the university, you see that most of those really big paradigm changing events in industry are simply not embraced by what we call the incumbents. So it's always the big players who basically are the last to embrace the change. So in a way, it's harder in Germany. When it happens, it's either you guys go bust, and I really hope it doesn't happen, that the car industry just goes bust because they thought they could sort of, yeah, slow walk this transition forever and the rest of the world moves on. Or what you also see, fortunately, is that in the end, they get with the program, and then, yeah, you get a couple of years which are really hard, but then you pick up where you're good at. Fortunately, with electric vehicles, building a car is about much more than the drive train. And Germans are really good at making cars, and that means not only the combustion engine. So the rest is actually harder, getting your doors to fit well, that sort of stuff. And so I hope that we will see the ID3, for example, the ID4 really picking up pace. I really hope so.

Katja (8:09)

For me, Herbert Diess of Volkswagen is someone I really like to follow and I really like to listen to what he's doing. He's, I think, a bit trapped in the car industry as a really open-minded person, really going forward and having innovation in his mind. But there's really BMW, which is now starting maybe an electric business. For me, it's really sometimes, as I am in the middle of everywhere and I'm al-

ways between everyone and just want to have climate-friendly mobility, people are also bashing me for talking with this kind of industry because they say, which is true, that we need to cut down the pieces of cars. We are running to 50 million cars in Germany, which is really horrific.

Auke (9:00)

Yes, and they get bigger over time.

Katja (9:03)

So what I want to say is that it's not getting smaller and electric and shared in urban areas. It's more like having an SUV, a really huge car. Even here in Vienna, where I am right now, the cars are so huge and used in urban areas. So for me, it's not just changing the industry, it's also changing the mind of mobility. What is your opinion about how can we do this?

Auke (9:33)

Absolutely, absolutely. I just want to make very clear that although I'm a big fan of electric vehicles, because they really reduce CO2 emissions by a lot, and I think when you produce them renewably and drive them renewably, you can reduce emissions by a factor more than 10.

So you can solve that part of the problem, but particular emissions you also get from tire wear, for example. So big cars also means unhealthy cities. Of course, big cars also mean that you can be hit by big cars. For that reason, unhealthy cities means lots of noise, which means unhealthy cities, which means less room for your children to play. So it's very interesting to see that after World War II, I think, everybody was so enamored by basically the American

way of life, and the Americans were so enamored by big cars that making a city car-centric was really seen as the way to go. For example, also in Amsterdam, they had big plans to let all the canals be replaced by big highways. That was the future. Fortunately, we're now sort of reversing course, but it's going very slowly. My hope is, and I don't know if that will happen very soon, but I think it might, and I think it would be very nice that we get self-driving cars. Once that happens, it's very easy to be picked up by car. Basically, every car is a taxi automatically if cars are self-driving. Then, the whole paradigm of car sharing becomes a very, very different thing. It's just like Spotify would have never happened without mobile phones. I think car sharing will have a hard time really quickly expanding without self-driving cars, but I think that will happen, at least to some extent. Then, if you basically choose a vehicle for your trip, then on most trips, one person's small vehicle will be more than enough. The fleet of shared vehicles will largely be small vehicles. I really think that's the future. And then we can finally take back our cities. And one of the most interesting things I'm finding out recently is that the car people, the mobility people, and say, urban designers, they hardly talked to each other in the past. It was like, okay, we get car streets and then you do the rest or something. And now there's much more people sort of wanting to reimagine the city from scratch at the beginning. And then you see that most people have a very sort of dual nature, that they want a big car when they drive, but they absolutely don't want a big car when they live in a neighborhood. So it's basically every one of us has basically multiple faces. We like cars when we step outside and we want to drive somewhere. And it's sort of a default mindset also for

many people. But then if you take them, for example, if you show them what their street could look like or something without cars, it's like, wow, that sounds nice. That would be a nice place to live. So I think we are sort of finding out that cars and cities don't match. And we're very slowly finding that out. And we're still sort of having to let go of this ideal of big cars. And you're happy when you have a car like a, preferably a flying car and a big one. But I think, spot say, also young people that I talk to really don't have this fetish as much as the older people. They also like to look like, I mean, having a big car and showing off. I mean, that's something that a lot of people have. Also women, by the way, and often for women, it's like, it's safer for the kids. They drive a tank because it's safer for the kids or something, which is of course so, so horrible if you just zoom out a little bit. I think, is this making the city safer? Is this making your kids safer if everybody does it the way you do it now? Right? Of course it doesn't. But I think we're moving on. I really hope so. I really hope that we don't just replace the combustion engine with an electric engine. That would only be step one. It's a very important step. It's only step one. You agree, don't you?

Katja (14:03)

„Ich habe mich entradikalisiert“, as they say in German, because I really... Sometimes I get angry, because for me, the ads of car industry are always in the desert, in streets where there's no one there.

Auke (14:21)

Route 66 or whatever, right. The place where nobody ever travels.

Katja (14:27)

And if they make pictures, sometimes maybe they know it or they don't know it, they park the cars in a kind of bicycle lane. And it's always this, I was tweeting some days ago, why don't we just have like a „Rauchverbot“? Also we go with the ads of cars because they are imagining a kind of product which doesn't exist, which is not there anymore because ...

Auke (14:56)

And when we say weapons are forbidden because they're so dangerous, etc. etc. Shouldn't we be thinking about making cars smaller and safer? I mean, I'm on record as I love Tesla. Everybody knows I love Tesla because they are guiding us along the way to electric vehicles. I really like that. But the Cybertruck, I mean, which idiot comes up with a car with one of the big selling points is if you run a sledgehammer against it, it doesn't break. I mean, just imagine your head and not a sledgehammer bouncing up against this thing. It's a really deadly and all the edges, etc. I mean, which idiot thinks it's okay to drive such a thing into a city? So there's I think a very strange disconnect here as to what we allow in terms of people having basically very dangerous, very large, also dangerous to the planet, of course.

Katja (15:54)

But to be honest, if I ride my bicycle through Hamburg or Berlin and cars are passing me by, this kind of vehicle already exists. Because for me, it's the feeling when a huge car is just like this and you feel the kind of air it is moving. For me, it's already this kind of tank. It's already happening ...

Auke (16:18)



Yes!

Katja (16:19)

... and always you have to go outside the way because you are just this idiot on a bicycle. Go out of my room. Which is stolen from us as people who don't have cars in Germany, that don't have a lobby, that don't have a voice. And for me, it's really... I said it so often that I really admire the work of the PR people and the lobby people of car industry because they are really telling good stories, which everyone believes. But ...

Auke (16:46)

Basically, „Werbung“, commercials, etc. were more or less invented by the car industry. It was the first industry which did this on a large scale. They have been selling us dreams by the way and also I think selling themselves dreams. I don't think everybody is evil, I just think they are very much, very, very misguided. But they are really professional at this.

Katja (17:14)

And they are everywhere. It's really kind of network. It's awesome. Also, our Verkehrsminister is telling stories about there are so many cars built right now. They wait for their buyers and car industry is like, no, we are in lean management and we are just producing cars when someone is buying our cars. So there's also a disconnection happening right now. And for me, it was really a kind of ... I drank a white wine at one in the morning when they said there will be no Abwrack-Prämie because I really wasn't sure if this is coming again. And it was really like a kind of goal we had from the people who are working together as saying no to any more money

just for selling cars. So for us in Germany, I think we don't have the possibility and we don't have the strength also to dream big. As what you told me before, when people are seeing car-free places, they are admiring it. They want to drink a coffee there but not in my place because I like my car. I want to have it, like to grab around it. So what is your opinion about changing this kind of behavior? Is it about, as someone told me, René Engel, is it about a cultural change? Is it a technological change? And what is the percent you're giving it?

Auke (18:37)

I don't know German culture well enough to have a perfect recipe, but what I do know is that it would be very, very nice if our biggest export product from the Netherlands would be the idea of bike lanes. They're really such a good idea and such a simple idea, basically. And once you create that, you make it much easier for small vehicles to pass. I even think that if you redesign a city now, you could go further and also envision what other kinds of vehicles, slow-moving vehicles, small vehicles, basically if people not encapsulate it, but just people and some wheels, you could have apart from a bike. And I do think that it is strange because Germany also has a very, I think, vibrant counterculture, let's say the Berlin vibe kind of thing, where it is, I think, ahead of the Netherlands, for example. I think Germany is not a lost cause by any means. It's just that cars have been very central to the culture. And also I think a symbol that was grasped, that was one thing that was really going well after World War II maybe, that's also ... So this is something to be proud of. This is something you're really good at. Internationalism, everybody agrees. You're really good at it.

Katja (20:03)

We are also very good at care work, but care work you can't show anyone I saved a life. We have been, I don't know if the Dutch people, we have been clapping for Corona.

Auke (20:14)

I think everybody worldwide has been talking about your reaction to Corona. And everybody's saying like, shit, if you're not an Asian country, then Germany is basically the one to emulate. And look, they choose Merkel instead of Trump, you know. These people really know what they're doing. So for me personally, for example, I grew up first in my first year when I was still very young, there were still a lot of old people, for example, fulminating about Germany and about war, etc, etc. And as I grew up, I got the feeling that basically Japan and Germany were the ones who had actually learned most of the war. And we're taking the best steps basically to never make that happen again and to make sure that that good. So yeah, Germany for me is a country that we can learn a lot from. And I think they also ... I trust Germany to also redesign cities, but I don't know how you can really speed it up, what kind of bottom-up processes. Yeah.

Katja (21:31)

Did you ever own a car? Did you ever have a car by yourself?

Auke (21:36)

Yes, yes, yes. Often. Yeah. To be quite honest, when I started, but now I'm talking about 30 years ago, something started working. I said to him, I'm not going to have a car. So I tried for a while, but then I was in a consultancy firm. And in the end it turned out I was

to be the first person not in a car in this very big consultancy firm. So they basically said to me, do us a favor. And so I drove a Ford car on natural gas. But to be quite honest, I actually do like cars. And right now where I'm living, it's so rural, that it would be really hard not to have a car. It would be, of course, it's a first world problem. Of course, we still have public transport here, et cetera. So I'm just moaning. But I'm really happy with my Model 3, to be quite honest. Yes.

Katja (22:33)

Okay, you own a Tesla.

Auke (22:35)

I charge it from my roof, but it's still a lot of stuff. And I do try to, when I go to cities, etc., I try to enter them with public transportation, which also makes it much more easy to mingle once you are there. But yeah, Corona has also thrown a lot of things out of whack at the moment. So I'm a really bike lover, and ... but yeah.

Katja (23:05)

Peter Fuchs has put a question, because we as Germans always look to your Dutch people being like so bike friendly. And he is asking why do Dutch people always have so much cars also? Why in a country which is well known for bicycle culture, so many people are still stuck on cars.

Auke (23:34)

I could take myself as an example, I'm afraid. I think basically because it's really handy to have both. So I would love to have this car sharing scheme that I just described to you. That would really make me give up my car just like that because I don't have to have this

thing to own it all the time. But there are a lot of trips that are easier to make by car than make by public transit or bike. I mean, seriously, I have a lot of appointments and I often look how fast will it get me there with public transit. If I then take the fact that I have to be there at a certain time, so I don't have to look at how long it takes with public transit, just from the time you step into the train to the time you get out of it, but I really have to look door to door. And sometimes you also miss your connections, etc. I usually, sometimes it's faster and then I take public transit, but usually it takes about 50 to 60% longer what I do. And then it's really handy to have a car and also I telephone a lot, which is also super handy to do in a car. People are really annoyed with you and I get that when you do it in a train. So yeah, to be quite honest, I get the love of a car. On the other hand, I tried really long to design a really, really small car for myself. I also had 50 students at automotive faculty in the role of them involved to try to make this happen, basically a little bit for myself. And I really still think that my car could weigh 300 kilograms. I really think that's doable and I would love to have that. But unfortunately, yeah, that's not really in the market. There's a twike, but...

Katja (25:37)

Citroen is offering this kind of, it's called Ami, I guess, this really tiny city car.

Auke

Yeah, I saw it yesterday. Yeah. It can only go 45, so for longer, you cannot go on the highway, so that's a little bit of drawback. But for city transportation, of course. So what I envision, if we ever go car sharing, then this Ami is one of the bigger ones, actually, because

you can go with two persons, right? So you can even make it smaller than that. And basically, you're still your frisure, because that's also something that the Germans are a little bit more aware of than the Dutch. There's very few people who are so casual about how they look as a Dutch. If you just rain and just, yeah. You come here and it's a little bit different.

Katja (26:26)

I think it's a kind of a cultural change because people, I wrote on Twitter some days ago, I took my train to Berlin and people from Berlin were dropping out of the fast train, the ICE, and they were like changing their, I don't know, office clothes against the culture of being myself. And that's for me really astonishing because we all saw each other in video calls, there were people passing by, dogs and cats and children, and now we're getting back to this kind of uniform of, I don't know, consultants and I was asking myself why do we always get back.

Auke (27:13)

It's a pity. It's a pity. It's a pity. I must say though that for me, for me, I did actually put on a shirt and I was using a t-shirt and I thought, well, you can never miss with a shirt, you know. So for me, it's always, clothes are always kind of immaterial. I just dress the way I think will probably work and I don't care about it. But it does create a difference. And I also noticed that I had a German wife actually, along in the past. Germans are really more formal, much more formal than people in the Netherlands. And I think it also helps this car culture because the showing off is more important with your car, showing off your clothes and basically getting out of your car looking like you just went to the barber, etc. And I also, I

think I feel a very strong motivation to make it and to show that you're not poor anymore. And that's so for you guys, the war was also more devastating than for us even. And I think this is a very powerful, I don't know, Wirtschaftswunder ...the car is part of that, part of look, we clawed our way back and this is success. So I think a lot of those reactions, it feels like you are sort of judging those older professors for ... basically saying to them, your success was not a good success, you did wrong.

Katja (29:06)

In Germany, it's not smart to have a life without a car because you can see the growth also. If you get a better job, you get a bigger car. It's like growing with a sense of, oh, I can see how important you are, and it's not regarding the bicycles.

Auke (29:24)

Yes, yes. I just hope that we grow over it. I think younger people in the Netherlands have this much, much less. They have it to a certain degree, but much, much less. And when I was young, getting your car license was really the first thing you did when you were 18. It was really sort of a right of passage. And soon, your parents made sure that if you didn't smoke or whatever, you got money to get your license quickly. And then you had your car license. And for example, my nephews, the one that said, yeah, I'm going to do it very soon. He's 20 now or something. Yeah, I'm getting around to it. And the other one is like, yeah, once, but you know, one boulder. So yeah, I don't know, better. That's wrong, by the way, the other one has his driving license, it took a while.

Katja (30:20)

I would disappoint my audience if I don't ask questions about, can you compare a combustion engine to an electric engine? Because today, again, a study mentioned that electric cars in Germany will take over ten years to be successful. If you can keep it simple, how will you compare these two systems?

Auke (30:48)

Will you send the link so I can squash it again? But basically, it's super simple. A combustion engine is a wonder of engineering with all those explosions, thousands of them in a minute, and it still works, but on average, so not the maximum efficiency, but the average efficiency is far below 25%. So basically, throw away 75% of the energy you put in there. And with an electric vehicle, electric engine, first of all, of course, it's much smoother because it's magnetic field. So it basically lasts forever, which is nice. And you don't have to fill it with oil, that sort of stuff. It's simply a very nice, easy-going way of making propulsion. And it wastes, well, worst case, 10% or something, instead of 75%. So starting with that, you basically already lost the race. Then, of course, you still have to put in a battery, et cetera, and you have to create that battery. Yes, yes, yes, it causes CO<sub>2</sub> to make that battery, and that's the Klima Rucksack that everybody's always talking about. But that backpack is getting smaller by the year. It's really, there were two much maligned studies, and the second one, after two years later, basically admitted that they were more than two times too high. So things move very, very quickly. And this backpack is really not that big. It's a backpack for maybe 30,000 kilometers or something, and then you're rid of the backpack. So if you forget that, it's basically two motors. One motor is four times as efficient as the other one. And



of course, even if you feed the electric engine with electricity from a mixed grid, so if you take pure coal, which you can buy nowhere, then we come actually pretty close. But if you take the normal mix at the moment, for example, in Germany, combined with four times as efficient engine, it's still now contest in terms of CO2 emissions. Does that make sense?

Katja (33:16)

For me, of course, it doesn't make sense because for me, it's so much about fake news that is sometimes so unbelievable what people are writing, what people are telling as so-called experts. And for me, I have been at a PTO business and they were making this huge excel table regarding combusting engine in buses and electric engines. And there was really one guy, a controller, he's not in love with technique or anything, but he explained me that this is a kind of a life circle. And in this one of buses, it will always be diesel. And this bus maybe can have like after five years, another engine, another electric engine, which is even getting better. And there are no moving parts. There are not so much times to go somewhere and have a repair. And so he was really, as a controller, he was explaining to me why electric business in a car and also in the PTO business will be the better one, regarding also that this kind of fuel prices are always so depending on big oil and you'll never know what kind of reaction this will have. But I also was like ...

Auke (34:39)

That is also one thing that people often forget with electric vehicles. Risks and uncertainties cost money in a company. A company has to either insure or also operationally often has to have extra people, etc., extra extra vehicles, for example. Maintenance is very

expensive, but also oil prices, fuel prices fluctuate. You have to make sure that your bottom line is not impacted too much when it happens, so ... I met a lot of controllers, too, who said it's much more relaxing, basically, to work with electric vehicles. They're very predictable. Electricity is basically such a small part of your overall expenses that even if that fluctuates, which it doesn't really, then it's still okay. Maintenance is no problem. They can last long. The most important thing people should, by the way, remember is that with electric vehicles, the battery is, of course, the linchpin. The battery is what it's all about. The motor is four times better in every respect. It's really no contest with the battery. It used to be the problem. I have this graph where I say 1900, if you wanted to take a Tesla battery, it would be 10,000 kilos, an elephant. Right now, it's like 300 kilos or something, so that's a really big difference. But it's still going very, very, very fast. Five years from now, batteries will last, I think, at least three times longer than they last now. They will be, I would say, another 40% lighter, which basically puts them on weight parity if you take in the lighter drivetrain as combustion cars. And they will be ... in the showroom have more or less the same price. It's a moving target. Unfortunately, for the diesel and gasoline producers, they are also moving, but very slowly. They will probably improve another 30% or something in the next 25 years if they really try. By that time, the increases in electric vehicles and batteries will be incomparable. It will be like 10 times better instead of 30% better.

Katja (37:03)

That's what we are always telling the people, „saubere Verbrenner“, which never will come true. Because they can't

Auke (37:09)

Like clean coal, you know? Clean coal, yeah, yeah, yeah.

Katja (37:14)

But there was another question and it's really linked to this kind of situation because people are afraid that when people are driving really good vehicles regarding climate relevance and so on, are you afraid of rebound effects? They will drive more and they will buy a car saying, oh, I'm so, I don't know, ethical and also like this kind of, but what we have is like rebound effects on every kind of going better. The money is spent somewhere. And so what is your, yeah, your way of looking about or upon rebound effects regarding car driving and also buying cars.

Auke (38:00)

I have tried to find rebound effects in immobility, and I think they're simply not that big, but there is, I think, probably some rebound effect, but I'm not an absolute expert, although I must say that all the papers I've read about rebound effects were also not written by experts, but just by people postulating this could be a problem, and let's just freak out even though we don't know. So I'm not very impressed about the rebound effect, partly because people actually don't drive that differently for green reasons. We could, we'd like that, we talk about that a lot, but actually, I would say the amount of kilometers that are shifted because people say, oh, I'm green now, now I can, now people drive exactly the same like I did. The only thing is it's cheaper to drive an electric vehicle which could give people the feeling like, hey, if I drive more, it's not that expensive. So actually, I'm more afraid of rebound effect because people find out it's not very expensive to drive another kilo-

meter than, that I think the amount of people who think so green that they shouldn't drive is unfortunately not very big. Maybe it is when they discuss it, but not in practice. But yeah, actually, we did a study where we said if this car sharing thing becomes a thing, there's a lot of studies into that, and then we really think that maybe, like you see with Uber, Uber basically mainly takes over public transport at the moment, which is of course, yeah, environmentally speaking, not really a step forward. They also take over part of the private car traffic, which is nice, but it's largely public transit that they take over. And I think when this beautiful scheme that I just made up that people are going to drive, are going to share self-driving cars, then we will also have a strong rebound effect there, I'm afraid. Fortunately, if we really pull it through, if we really do it the right way, it will be in very, very small environmentally friendly and also neighborhood friendly vehicles. But yeah, so the big thing is, I think, to have to make the people who design cities and the people who are in charge of mobility, to have them sit together and also make a very strong statement towards the car industry. Actually in Holland, I was really surprised at how combative and ready to go to bat the people were who were in charge of designing the urban landscape. They really know what they want. They really are exactly on the same page as you and me. So we have to unleash them a little bit more, I think.

Katja (40:55)

Do you think we need another kind of pricing system? That someone who is going by foot gets money, someone who is riding a bicycle gets also money, someone who has special skills ...

Auke (41:08)

Yes, absolutely, absolutely. I don't know exactly how it's priced in Germany, but I think it's probably a bit the same as in the Netherlands. And what we see there is that every hour you waste, for example, because you have to stand in a traffic jam when you are in a car. That's very expensive. So we really have to invest in more asphalt, more roads because it's really expensive to have those cars waiting. People who just walk around, if they take more time, that's different. So the environmentally friendly options basically have no value in the system. And all the environmentally unfriendly options are extremely expensive if you don't help them along. It's a really, really messed up system. And yeah, I think it's probably the same in Germany. So basically saying no, no, we do. So what I'm saying is, and I have a couple of people who know much more about that than I do, who completely agree. So I'm sort of convinced that this is really true, even though I'm not the biggest, world's biggest expert. They basically say, we should look at people want to go from A to B. And it doesn't matter. Let's just start with that fact. They want to go from A to B. And if they take an environmentally friendly option to go from A to B, it's clear that more public money should be allocated to that option. And that's what we want. Anyway, if you really thought that way, then money would be raining down the heavens for the pedestrians and for the bike lanes and for the bikers and for the small vehicles, because that would be a completely underfunded option. Now they get the sort of scraps like, oh, yeah, we also do something with bikes or something. So I'll leave in some 1% of the mobility budget for that kind of funny stuff or whatever. People have to do that themselves. And yeah, so if we change the paradigm around, and if we just say, travel is the target, and we're

just going to make sure that we as a society facilitate that in the way that we really want it, I think it would change very, very fast.

Katja (43:33)

It will also be a kind of equal system because people who don't have so much money are always environmentally friendly, not by behaving like being this because they don't have the money to buy this kind of big cars. So I think it will be get also a kind of balance ...

Auke (43:51)

Yes, but even if you say, okay, if you can afford a big car, you buy a big car, that's your problem. And all the measures we take to basically help those people with the big cars, with parking places, big roads, etc., etc., that money is of course, is not, so the rich people don't pay more, yeah, partly because of income tax, but I think that money is not redistribution even. It's simply sharing the money in a way that's optimal for the city, basically. So what you're saying is redistribution, and I agree, by the way. I'm also a little bit left-wing. I think that if you look at happy countries, they're much more equal, and if you look at how much people think...

Katja (44:41)

... Nazis. It's just in Germany, it's really a dangerous moment at the moment because the bike lanes, the pop-up bike lanes in Berlin have to be rebuilt, down-built, I don't know the word, abgebaut, because our right-wing party has said that Berlin isn't deadly enough for Berlin to have pop-up bike lanes. There were 15 people killed already riding a bicycle in Berlin. And for me it's also like a kind of political behavior to change mobility. And I was, I have some shit storms always and people are telling me, yeah, be less feminist,

be less political. And I was like, how can I change something without being political, without being...

Auke (44:45)

I have this problem all the time. I follow a lot of American news, and it's so hard to not talk about democracy fading away, and I cannot think of polite words, but people who are doing the wrong things, it's very hard. But also China, by the way, it really worries me, how the whole society there, but anyway. But I never get extra followers when I go on about that.

Katja (46:04)

No, me also, and ...

Auke (46:06)

That's one of the things that also really, I think, is really horrible. The way we treat animals, I think it's so completely not okay that it's really hard for me to shut up about it. But I never get any extra followers on Twitter for going on about it. So that's our fault, I think.

Katja (46:28)

Maybe we won't see the change, but we are like, I always say maybe we are the suffragettes, which is like Frauenwahlrecht in Germany, and they will walk our line afterwards, I don't know. There are two questions left. Someone told ...

Auke (46:44)

One thing I just want to say. We should never never ever underestimate how powerful our voices are.

Katja (46:51)

Okay.

Auke (46:52)

We should never underestimate how many people who basically don't want to hear it from us still are influenced. The conversation is still influenced because you wear the t-shirt and because I...

Katja (47:07)

Yeah.

Auke (47:09)

I fulminate against animals, etc, etc. People should never, I mean, Margaret Madd said it very beautifully when she said, people ask me, I'm paraphrasing now, but people ask me, do you really think a few good people can change the world? And she says, I don't know what else ever did. And it's really true. It's really true. We're making a difference right now. I'm 100% sure of it. It's just that you don't notice it very often.

Katja (47:36)

Yeah, it's always like, I think it's really, really like a kind of human behavior that you always remember the bad times better than the good times. But I really, I'm into this kind of life balance. I don't want to have a work life balance anymore for two years now, one and a half year. And for me, it was really, yeah, I said the same things like 15 years now, but then I changed into Katja Diehl, into she drives mobility. And then it was like getting really personal, but I found people who are thinking the same way as I left the corporate world, I was like, oh, this can be world here. So many people thinking the same, but it's also when you change this and people who are doing this kind of hate, they know that there's something wrong, that the system is wrong, but they are privileged by it. And so it feels like they are losing something and we are not able to give



so good because we're not in the Zen Buddhism. And for me, it's really people are telling me, Katja, if you are wrong, you don't have anything like hate. It would be so annoying to anyone. Everyone could go and leave Katja behind, but if people are reacting to your story and people are reacting to your kind of view and that you are changing. Today, I talked about Spielplätze. I was like, yeah, we're doing our children in this kind of cages that can play in the city and they are saved from cars. And people are like, oh, fuck Katja, you again. I always thought Spielplätze will be such nice places in cities. And now you changed my point of view. It's a horror for me that people understand that the system is so bad because we are always doing this for the car. The car is the kind of, that shouldn't be changed. So we put our children in this kind of cages and people are like, I never thought about it. And then now I'm looking about Spielplätze and for me, it's really hard.

Auke (49:49)

But what I want to, I of course agree with you, but I also would like to stress what I understood from what you just said. I don't know if I picked up the vibe right. If you tell this from a more balanced perspective, so if you don't get angry about it, but basically just get compassionate about it, people are much, much more willing to hear it from you because you're not attacking them. You're basically just saying, why? You're more, and especially if you talk about children and you really care about them, very, very few people attack me for caring. That's still a sort of a no-go area, fortunately. So I think, yeah, we can make a lot of difference if we keep it positive, or at least if we are passionate but also show empathy and maybe cool off a little bit when we're angry. Because very few people ac-

tually are out to do evil. Some are sometimes, some part of the time because it gives them a kick or something, but most people, most of the time... I think I'm misguided.

Katja (51:09)

Yeah, they have a wrong...

Auke (51:13)

A big car doesn't make you happy, for example. That's simply not true. A big salary, a lot of research into it, doesn't make you very happy. It really doesn't. We're not for sure. And so I think we're just stray a little bit. We have to find the truth again.

Katja (51:34)

Yeah. For me, that's what I like really about Twitter, to find people who are not like a strong voice, but who are guiding and who are really listening and who are also able to have, okay, asking questions and seeing the picture behind it. Because for me, it's like we are not allowed to dream. It's like we are not able to dream. I always say I will dream as big as I can because I think I get 50% if I'm good. So I will paint this really big picture. As you said, it's like looking through children's eyes. I don't have children. I'm asked at the moment, how old are your children? I was like, yeah, you're always talking about children. I can take care of children also not having them. And that's really, for me, I found this kind of narrative to have not car-free cities, but children-friendly cities. And everyone is like, what do you mean?

Auke (52:39)

I have this. I was on a school for problem children when I was younger. I didn't always have it that easy. The best teachers then

didn't have children yet. Later, I went back to the school because they did a really good job. I just wanted to go back after I finished university. I think I was the second who was there who finished university. I should just say, guys, you did a good job. All the ones that I really, really loved, they were either gone or now in sort of more supportive jobs. They'd just given up. Part of the reason was they had children. I feel personally that because I don't have children either, I feel so much love for this world. I feel so much love for everything that it's much easier for me in a way to just go 100% into this love of the world and try to make it better. I don't think for a moment that not having children or not having religion, for example, by the way, diminishes what I can give. On the contrary, but it's a mindset. A lot of young people have this mindset, by the way, a lot of them, really. I really think people as young as four. When I was 14, I didn't have a clue as to the wider world and what I would achieve and all that sort of stuff. When I went to university, I still didn't have any idea, basically. Now I talk to people 40 years old, when I tell them, you know, sometimes you have to find your path, et cetera, all this sort of talk that I had with myself when I was 27. I say, yes, yes, yes, yes. I have to make my life worthwhile and I have to sort of find my path and make sure that it contributes. 14! I'm like, my God, go play outside, you know. But if I have them as students, it's really nice. It's so much more aware of the whole system than youngsters in my time. I really feel that. That is hope.

Katja (54:52)

Yeah, of course. It's always also my kind of, yeah, I don't know, anecdote, but I say, sometimes I really love to leave this all behind because it's so much work and I'm there for like 20 years and I have

the feeling nothing is changing, but to be honest to myself, it's my Berufung. It's my intrinsic, I have to change it. It's so, I don't feel like I'm as huge as Greta Thunberg, but when she talked about, I'm talking about logical facts and you are so emotional with me and I'm always thinking she's so right because she's never doing anything like a narrative. She's always on facts, but these facts are doing a kind of emotionalizing with the people who are doing this life behavior and also thinking it's not so good for anybody else, but I like it. And so for me, it's always finding, „Bildet Banden!“ in Deutsch, as of finding people who are on the same way, who are also have a lack of conspiracy, this kind of „Aluhut“ at the moment in Germany. And I think we need to be really strong because media is part of the problem. Media is telling people there are 30,000 people in Berlin and they're doing this kind of anti-Corona. Before Corona, there were like 1.1 million people on the streets for Fridays for Future, which was not that important for media. And also Black Lives Matter wasn't important.

Auke (56:31)

Yeah, media is big. They say media, if it bleeds, it bleeds. So anything, if two people are stabbed, that's bigger news than when 500,000 people march for a good cause or something. When a hundred people are lifted out of poverty, that's somehow not as interesting as one person who falls from grace or something. I have this saying that I really like, they say it's Zen Buddhist, but I'm not sure, that the growing of the forest is less remarkable than the falling of the tree. And I really think this forest is so remarkable and these falling trees are so boring. And I have the feeling that maybe it's just my little world, my little bubble sort of solidifying, that I find

more and more people who say, yeah, of course, yeah, of course you're right. Of course, the media is painting a much more disturbing picture than reality. But of course, most things are improving, not climate wise, but in terms of, for example, poverty, we are improving, fortunately. Trees are becoming safer, fortunately.

Let's make the good things better. That's basically my motto.

Katja (57:57)

There was this book, The Good News. It is a German book and it's just erasing that there's no poverty, but it's not about us as Germans. We don't feel that we are arising because we are not connected to the people who are not dying from Cholera, I don't know. I was there and the guy was reading about this book and it's so true that everything is getting better, but we are so on this kind of top of an iceberg and we are like, we want more, more, more. It's not about getting more, more, more.

Auke (58:34)

... give yourself, give yourself, give your, your, your, your, the German people some, some credit. I was so, sorry, incredibly proud when Merkel said, wir schaffen das. Now, and of course, of course, reality is always a bitch, but still it was such a strong statement like, no, no, we're going to do this. And of course, Germany is 0.1% and Holland is 0.1% best off people in the world. And of course, I know, I know, I know, but still imagine this happening 50 years ago. No way. Fuck them. End of story.

Katja (59:27)

And for me, Angela Merkel is also really, I think she's a bit of having a good mood because she knows she won't be reelected. She will

stop after this. And she had this kind of outro Gipfel and she just gave the people one hour of video chat. And before the video chat even started, she was saying there will be no more Kaufprämie anymore. And it was for me, it was like, yeah, I'm not connected to her in any kind of topic, but in „Wir schaffen das!“ and in this kind of talk, I'm totally proud. And also in Corona.

Auke (60:03)

I'm not saying, by the way, that I'm the world's biggest Merkel fan, but because what she did with Corona, what she did with Syria, I think was remarkable and really good. And the way she handles Trump is also really good. But a lot of the, I'm not a typical CDU voter, let's put it that way. But yeah, I think we should, the Germans should give themselves some credit now and then, even though the cars are getting bigger and bigger and that's not good. Now, put yourself on the deck a little bit.

Katja (60:37)

I think it's so funny, the people, because I really talked about, with many people, about my kind of denying to be an activist, my kind of denying to being radical. And I really, in talking to people, what do you think, what is an activist, what do you think is radical? Because I always thought people who are climate activists, they are climbing on, I don't know, trees, they are doing something to save whales. But for me, it's really embracing someone's words, why he was saying to me, OK, radical for me, it's like you're changing so much, you want to change so much regarding the status quo. An activist is also like activating people to think. And I was like, OK, if you tell me this, I can embrace me to be an activist.

Auke (61:27)

You are absolutely a radical activist, you're not negative. Martin Luther King, is anybody saying Martin Luther King was not a radical activist? Of course he was. Nelson Mandela was not a radical activist? Of course he was. Jesus Christ, I don't think he existed, but still, radical activist. Just not very negative. I also see myself as pretty, I know that for example being vegan, and for example saying in my little world that electric vehicles are absolutely the future, and in 2030 very very few combustion engines will be sold, etc. It's considered pretty radical, and that you try to take your scientific world work and translate it into terms for as many people as possible to hear is often seen as very activist. But yeah, that's nice.

Katja (62:34)

We can talk for hours, but I don't want to stress your time. It's really nice because I really have a feeling on Twitter because I met two ladies from Twitter this day and it was always like this connection. It's so virtual, but I think at Twitter you get to know people who are in the same mindset also, if they are on different topics. And I have two questions left. Someone of the followers told me he has a bet with a friend that at the end of 2025, there will be 50% of new car sales will be electric vehicles. Is it possible or totally ...

Auke (63:17)

Sorry, how many percent? 50%. 50%. Yeah, could be. Could be. I would say around, so I would say I would not be that surprised, but I would also be very happy.

Katja (63:38)

And my last question, to make me dream good tonight, I want to have a kind of vision, how you paint the picture of future mobility, of future cities, of future rural areas, I don't know. Do you have something in your mind when you think about the future? Where do you want to live?

Auke (64:00)

I want to live in a rural area. I'm really happy, but I'm not a typical people person, actually. So I love it when there's nobody but my wife around, quite honest. But I have a couple of chickens and a cat, but for the rest, I'm fine. But my vision of the future is that we travel a lot using really emotive virtual reality. I think, yeah, I see myself sitting, I love the virtual reality glasses. I really don't think they cut me off from reality. I think they make me travel to all kinds of very, very interesting places, sitting inside of a solar system with my virtual reality glasses. I love it. And I think we will have a future where you and I have this meeting in, let's say, five years or something in front of Taj Mahal. And we're both very lifelike, or maybe 10 years, but both very lifelike. And that's, I think, something that I would like very much to be able to have friends all over the world, very special friends. And it's possible because, yeah, it's not writing a letter and getting it back in two months. It's not writing an email, being with them, but they are somewhere else. And then in the city, I really love this idea of basically your whole direct neighborhood around your house is a place where you walk, where you sit, where you talk with your neighbors, where your children play. And then yes, after 500 meters or something, there is a road, that's true, there's a road. And there you pick up your car sharing or your public transit, which is sometimes a better way to say it, public transit,



which is sometimes a better option. Or yeah, of course, you have your bike in front of your house. And then with car sharing, I think, and public transit together, there will be still some cars, but not very many. And it will be very expensive and very hard and very slow to now and then get them in front of your door. And I think people underestimate how wonderful cities would be if we somehow make this, make them non-car centric. I really think people underestimate how luxurious and how wonderful it is to live in a city close together without the stress, without the danger, without the pollution, sound, etc. of these 2000 kilo steel boxes that somehow got out of hand. So that's my picture of the future. Beautiful cities.

Katja (66:52)

Yeah. And I also like connecting the dots between people that you know in your neighborhood because in Hamburg I know all my people living in my house, which is really not so normal in Hamburg, but I really like that we are connected and I know their names and it feels better to live in a place where you know the people who are living with you.

Auke (67:13)

Yeah, but that also happens. I lived in a couple of neighborhoods. Last neighborhood I lived before this, we had basically the front entrance to the house was a back street where the cars could not go. And on the outside of a little group of 40 houses or something, 50 houses, 56 households and 40 houses, there was, yeah, you could slowly go with the car. But basically you entered your house through this common area. And within three months, I know most of my neighbors and it was really, really nice. And before that I lived

in a house where we actually had an Aufgang together. So, but it's very uncomfortable to be together in a small hallway or something. You don't speak to each other when you're just trying to squeeze by in a very, so, and basically it's a place where you only are for three seconds or something, so maybe 10 seconds. So I didn't know anybody there at all. So really how we design our cities makes social cohesion a very different, much easier. And one of the most important things you can do to increase social cohesion, let's get rid of those cars in front of the front door. Yes, I really think so.

Katja (68:33)

Yeah, for me it's the same. Because we will gain so much space and we will gain so much life quality. And for me, people always are telling me, yeah, Katja, if you are so annoyed, move to the rural area. And I was like, no, I will change the city for the better because I want to live there and it's my city. So I thank you so much for your, yeah, for your really, also, I think you're also like a kind of storyteller. And I really appreciate that you shared your vision also with me because it's heart filling for me that people are also dreaming and seeing the possibilities of our status quo. And I like to change with you the world for the better. Have a nice evening with you.

Auke (69:18)

I think you're doing that. I really do.

Katja

Thank you so much.

Auke

Big hug.

Katja

Bye-bye.

Auke

Bye-bye.