

## **Fifth focus group, held on 13-11-2017**

### **Replaced names of the participants:**

Paulien

Petra

Pieter

Renate

Moderator

### **Notes:**

The replaced names correspond to the names used in the paper.

Other anonymised information is marked with [], e.g., [city in South Holland], [omitted description of the company], [30-39 years old], throughout the transcript. Settlements with less than 100'000 inhabitants are named 'towns'; with more than 100'000 inhabitants – 'cities'.

Indication [gap] means that the discussion could not be transcribed from the audio recording. Usually the reason for this is cross-talk: participants talking at the same time. Sometimes, some words of a participant are not audible or are unclear.

Moderator: For the focus group there are only a few rules. The first is that all answers and everything you say is good. It is not the case that the answer of one is better than the answer of someone else. We look for as many ideas as possible about what the future might look like if the normal car is replaced by automatic vehicles. That is why focus groups are organized, to get input. So everything you say is good. Try to avoid crosstalk because Dion notes everything, that's easier if you do not talk at the same time. In the first two questions, I first ask Paulien than Pieter and afterwards Renate to give a reply, but for the rest of the questions it is just mixed up, then there is no specific order in which you have to respond. I have already introduced myself so maybe you can do that now.

## Introduce yourself briefly!

Moderator: If you can introduce yourself, so what kind of work you do.

Paulien: I live in [town in South Holland], I have three children. I work for myself as a pedicure specialist, so I travel back and forth with the car all day long.

Moderator: So not at a fixed location.

Paulien: No, at people's homes.

Moderator: Okay, fantastic.

Petra: Petra, I am [20-29 years old], I live in [town in South Holland]. I work in funeral care [specifics of the workplace]. So irregular working times, sometimes also in weekends. So these kind of things are nice to do.

Moderator: Okay, clear.

Pieter: I am Pieter, [40-49 years old]. I sell [items for house]. I am very much on the road, they sometimes send me to [town in Zeeland]. It may also be the case that I have to go to [city in Flevoland] or [town in North Holland]. I also notice that it is getting busier. Compared to a year and a half ago, extremely busy.

Moderator: Okay, clear.

Renate: Well, my name is Renate, [40-49 years old], I live in [a city in South Holland] with my boyfriend and two children. I work in [another city in South Holland] as coordinator [in a health institution].

[omitted discussion about the institution]

Renate: So, every day I am located at a different place in [a city in South Holland], so I'm traveling a lot.

Moderator: Okay, good to know. We have made an introduction video to show you a bit about the research and to prepare you for the questions we are going to ask.

[introduction film]

Q1: How do you normally travel?

- Train / car / ...?

- How long does your trip take?

- What do you do when you're on the road?

Moderator: Well that song is in our heads. Do you have any questions about this? Or is it clear? We do not want to think about the far future yet. The future in which there are still ordinary bicycles but actually the only difference is that there are no ordinary cars anymore but only automatic vehicles and everything is arranged. The security problems have been resolved, all legal liability has been resolved, all infrastructure has been adapted.

Petra: You make these assumptions because we are otherwise..

Moderator: Yes exactly.

Renate: To prevent us from discussing this.

Moderator: We're in 2050 and everything is settled, you should assume that. But first a question about how you travel now. So this question is first for Paulien. Take a normal journey in your head, a journey that you often make for work, for example. Do you do that by train or by car? How long does that trip last? What do you do when you are on the road? Could you answer that?

Paulien: I travel by car every day, my journey takes, depending on where my customers are, that can be in the region or elsewhere. Sometimes I travel half an hour when I drive to [gap] for example. Half an hour to an hour and I have 5 customers on a day. But what I do on the way is often eating a sandwich, because otherwise I do not have time for it. Occasionally I stop and to do some grocery shopping. But only eating in the car.

Moderator: Yes, listen to radio?

Paulien: Yes that also.

Moderator: Okay, Petra.

Petra: Really by car, suppose it would not be easily accessible, then I really think of my mother. Without traffic jam, the advantage for me is that I have strange working hours so then I am often, then the busy part of the day is over, so I do it in 20 minutes. I think that is actually just right, you still have a bit of travel time, because funeral care is quite heavy, then I can also empty my head by listening to the radio. I'm actually glad that I do not live near my work. Because colleagues often see acquaintances at work, and I have that less often.

Moderator: Yes, I can imagine that. And on the way to your work?

Petra: The same.

Moderator: Same. Preparing for your work.

Petra: Yes. Wake up with the radio. But I do not eat in the car.

Moderator: Okay, Pieter

Pieter: Also by car. How long does it take? Half an hour, three quarters of an hour. But I have to go to [city in Overijssel] [some days a week] for a meeting where my employer is located. So it's more than

two hours to [the city in Overijssel] and more than two hours back. On the way, I eat in the car, I call, I mail, I send WhatsApps, it is not allowed.

Renate: That's fair.

Pieter: But I have to say that often happens in traffic jams. Very often when I am driving in traffic jams.

Moderator: To spend your time useful.

Pieter: Yes. Sometimes also a bit of administration.

Moderator: What kind of administration?

Pieter: Well just keep track of things in terms of financial numbers.

Moderator: Oh yes. Do you have a notebook with you? Or do you do it on your phone?

Pieter: No just in a notebook.

Moderator: Oh in a notebook, yes. Clear.

Renate: On average I travel every day for half an hour to work and half an hour back. So, first bring the children to school and then I go to work. So I have breakfast in the car, so eating and drinking. Occasionally calling if necessary, hands free, though. And indeed if you end up in a traffic jam and you think: oh, I still have to send a WhatsApp, so then I do that. I know it is not allowed but useless time, especially when you are standing still.

Moderator: Yes exactly when you are completely standing still.

Renate: Then it is not useful.

Moderator: Okay, yes, okay, clear.

## Q2: Are you satisfied with how you use the time while traveling or would you rather use this time differently?

Moderator: The second question is also about your current journey, it is mainly about the last thing you just answered. Are you satisfied with how you use the time now? Or would you rather use it differently, you could think of these things as inspiration. So the question is, are you satisfied with the time while traveling? Or if you are not, would you rather use that time differently? And if you are satisfied you may also think about how you would rather use it. May I start with you Paulien?

Paulien: I'm just thinking about it.

Moderator: With you?

Renate: Well, at the moment I think, I also drive at times that it is generally not busy, then I find it, if it does not take too long, I also find it kind of relaxing to drive. If it all just goes nice then I just think, good. Music on, my cappuccino. Then I do not think it's all that bad. Then it is so difficult to think about what you would want different, you are just used to it. It is therefore difficult to think differently. Yes, what would you like differently?

Moderator: Nothing is right or wrong.

Renate: At first I don't think that it is lost time. But as soon as you stand still it is a lot more annoying yes. That gives a very different feeling.

[gap]

Pieter: At the moment you are stuck then it will be lost time.

Paulien: Totally agree.

Pieter: If you could spend your time in the car useful, at that moment, instead of watching the road, that would be fantastic.

Moderator: Yes. Because now you spend your time useful but that would be even more useful if you do not have to pay attention.

Pieter: It could be incredibly useful, because it is also the stress you experience, it is simply incredibly exhausting. Continuously have to pay attention, in case of congestion, during traffic jams. Cars can suddenly come from everywhere. You get all sorts of crazy situations when driving in a traffic jam.

Petra: You still have that bit of insecurity, you cannot do too much. If they drive automatically you can just check your mail, then it is safe.

Pieter: Yes, if you can fully rely on the equipment of the car, in terms of safety, then you are very relaxed in the car. Then you can do a lot of other things.

Paulien: Of course, I decide my own working times, when I start at 9 o'clock, I really notice that it is rush hour. Lost time. Now, I also consciously plan my appointments after 10 am, so when rush hour is over. I am just too happy. Then the rush hour is also over.

Pieter: Maybe there are no more traffic jams in the future, they are gone. If that thing drives automatically, and the speed and distance are monitored, in my opinion there are no more traffic jams.

Paulien: A kind of cruise control.

Renate: You are constantly driving in traffic jams because it is getting busier on the road.

Pieter: But everyone drives the same speed.

Moderator: But you cannot drive faster for a while. That will no longer work.

Pieter: No. The CIJB<sup>1</sup> can also stop.

Moderator: Yes.

Petra: I was shocked by that one movie, that the child is really alone in the car. That surprised me. That he could stay at work and that he would...

Pieter: Yes that is possible, I had not even thought about that, you do not have to be in the car, you can also give the car orders to go to my daughter's school to pick her up. I have not thought about that yet, but of course that is true.

Moderator: Let's see, Petra, you answered the question, you like it as it is at the moment.

Petra: That you can relax, that is what I think is nice, especially with the radio on, you can also listen to the news. It is a bit useful and relaxing at the same time. On the way, checking mail, WhatsApps, things like that can wait for me. For Pieter I understand that you use it a bit more. But that does not apply to me. But we all agree on this, traffic jams are lost time. You could have spent it differently.

Moderator: Yes and the special thing is, Pieter indicates that driving in a traffic jam is actually the most stressful.

Pieter: Yes.

Moderator: Then you have to pay attention because people sometimes do crazy things, but even the time you use to do other things, it becomes more difficult to anticipate. Then it might become even more stressful.

Pieter: True. Everything is related. Traffic jams are caused by a lot of accidents, all traffic jams are caused by accidents, indeed by a lack of paying attention, the people who are in the car are also less careful because they are distracted by equipment, while they still have to drive. The moment you have a self-driving car, no accidents can occur because everyone drives with same distance. In terms of safety it is perfect. People are totally relaxed in the car.

Moderator: Yes, thank you very much.

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<sup>1</sup> The Central Judicial Collection Agency (Dutch: Centraal Justitieel Incassobureau). Responsible for collecting a range of different fines, including traffic fines.

### Q3: Imagine traveling with an AV. What are the pros and cons of this, compared to your normal way of traveling?

Moderator: From now on, it is no longer necessary to answer per person, but it can be in a discussion form. Yes the first is a bit of a general question. So, now we are going to think about the future with those automatic vehicles. Suppose you are traveling with such an automatic vehicle, what are the biggest pros and cons compared to driving with the regular car in your case.

Paulien: He has already listed a few.

Moderator: And what did you think was the most important?

Paulien: Yes, that these traffic jams will probably be gone. Now, everyone is going to drive at the same time, that might be an advantage. But, when it comes to picking up children, I do not really think that is an advantage. You do not know how old they are. Maybe they sit in the car with a group. No, I think that's too risky.

Moderator: And other pros and cons?

Pieter: You arrive well rested.

Moderator: Yes.

Pieter: You will be rested anyway and you can do your work in your car.

Moderator: Yes, arriving rested is interesting, so the time at you can maybe spend better?

Pieter: Yes.

Petra: That's what I am wondering about, because I also think people will work more because of this. So people can use that time to relax or to work even more.

Pieter: Yes, that is correct. You will work for more hours. Not only the hours in your car but also the hours after or before you work at home or at the company. Yes, then you will work more.

Petra: You can plan it differently or more useful, I understand that, but I think it's a pitfall for people to misuse that time. Then I think that you only get overworked.

Pieter: Unless you go to sleep in your car. You can also use it as a sleeping place.

Petra: It is nice that there is the possibility to chose, the choice is then for the person himself. That he can sleep or can work.

Renate: It is also very easy to take the car because the alternative such as a bicycle or just go somewhere by foot, which is also very healthy of course, to do something, it becomes very easy to just get in the car and to sit down. To be lazy.

Pieter: It will be nice and lazy.

Renate: But I try to imagine what life looks like by then. I imagine a cartoon that my son sometimes watches, somewhere on another planet.

Petra: I would still take the bike.

[gap]



Pieter: You can build a fitness room inside your car.

Renate: Yes with a home trainer inside it. You can of course completely customize your car. A bus or public transport has that too, you can make it very much like home.

Pieter: You just sit on the home trainer in your car, it is a bizarre idea but it is possible.

Renate: And if you like to work, you put a desk in it.

Moderator: It is interesting, what do you think of Petra's comment, that it might also be a pitfall.

Pieter: Yes, that chance is quite big, because the hours you're in the car, that's working hours.

Paulien: This is work related but you can also use it for leisure activities.

Moderator: Can you tell us something more about that.

Pieter: Watching a movie.

Paulien: Yes. Just relaxation, you can for example go with your family a weekend to an amusement park or something. Not work related.

Moderator: No, you can...

Petra: Or if you actually finish your work inside the car. Then you come home and then you do not have to finish it. Then you have more time for your children or other important things.

Pieter: I think it has to do with how the design of the car will look like, it will become a relaxation room or it will become a working space.

Moderator: Or maybe both, on demand. What you want, you get the car you want, on demand.

Pieter: That you can change it.

Moderator: Maybe.

Pieter: That's possible.

Petra: What I was thinking about, I do not know if that is an advantage or a disadvantage, but it was not mentioned in those four assumptions. You then have a transition with traditional cars and the AV cars. I think you have a certain moment that you have them both traffic. I think that can be unsafe.

Moderator: Yes absolutely, that can be very unsafe.

Pieter: It seems to me, when you think about that, the feeling that you have to do it all at the same time. Of course, electric or petrol does not matter now. But if this would work, I have the idea that everyone should do this at the same time.

Petra: I just tried to say that.

Pieter: Because you cannot combine the old situation and the new situation.

Moderator: You have to start from 2050, so that it is fully implemented.

Renate: You have to skip some steps.

Petra: Then it should have been a fifth assumption.

Moderator: Yes exactly, very good.

#### Q4: Imagine that you have an AV and can adjust the interior as you want. What would you like to do while traveling and why?

Moderator: Yes we already talked about the interior. Well imagine that you have such an automatic vehicle, and that you can adjust the interior exactly as you want. What would you like to do while traveling and why?

Pieter: Well it depends on the time of the day, when it is in the evening, I just say something, if it is 10 or 11 o'clock, and you have to drive a lot, then I would like to sleep. And if it is during the day, maybe I want to watch the news. Then I first watch the news afterwards a movie and then I go to sleep in the car.

Moderator: Yes.

Pieter: And before that I have worked.

Moderator: Yes, if you have to come all the way from [city in Overijssel].

Pieter: Well, yes, for sure.

Moderator: And other moments?

Pieter: Maybe as a working room. Just during the day.

Renate: If I went for a day out with my family to a theme park far away, I would spend time with my family during the trip. Do something together, like a game.

Moderator: Yes exactly yes. Now you are paying attention all the time.

Renate: Be quiet, do not touch each other.

Moderator: Yes, that does matter.

Pieter: Is it true that the chairs in an AV are designed in a way such that you are facing each other?

Moderator: I think you can be completely free. It does not have to be the same setup, you can also sit opposite to each other and play a game.

Pieter: The basic situation is, of course, that we are sitting behind each other. Maybe they have swivel chairs.

Moderator: Maybe yes. So, watching news, sleeping, playing games, more things that you would do, and why? Just for fun?

Renate: Yes time for each other.

Moderator: And you, Pieter? Why would you do that?

Pieter: Well, just rest.

Moderator: Yes, clear, yes.

Pieter: You can sleep at home, but in fact you can also sleep in your car.

Moderator: And that works, and then you get out off the car and then you can go back to sleep.

Pieter: Maybe there is a signal or an alarm. You are now at your destination.

Moderator: And You?

Petra: Sleeping will not apply to me. The nice thing is that you can do something active or something passive, that you can make the choice. That you can determine this per day or per time.

Paulien: It is for me also more impulsive. Not pre-planned.

Moderator: Yes, there are, of course, some more options.

Pieter: I often have the fight against sleep, while I still have to drive a long distance. But, I do not want to go off the highway, I want to go home as soon as possible. But actually I am really tired. It would be great if you can sleep. Even if others ride along with me, I am the one who has to stay awake, they can turn their chair backwards, I would like to do that myself.

Moderator: Yes, of course. Do you still have things which you would do, either active or passive, or impulsive?

Paulien: Yes, what I already said, I never actually plan anything in advance, it is just spontaneous. When you go away for a weekend, I don't know, you just take the AV, we go away for a weekend. Then I really go to Limburg or something, or Belgium or Germany. Just take all kinds of things along the way. And bring things along the way, so you can do useful things. You can spend time on it but not planned.

Moderator: No, but that can be easier now.

Renate: It will also be an extension of home, because at home you just do what you feel like doing. This will also be like that.

Paulien: But on the way, it is currently spending less time with each other. Then you will have more time for each other. If you are on the road for a long time, normally it is only about driving, and the rest, you do not know what happens in front of you.

Petra: I was just visualizing that you have some sort of room or you can go to bed or you can sit at your desk, that you indeed have these interiors.

Renate: And I have another advantage.

Moderator: Yes.

Renate: Drinking alcohol when you have a dinner. You never have to think about who is the Bob<sup>2</sup>.

Pieter: Yes.

Moderator: You have to be able to find the car.

Paulien: Well, it will have something that makes noise, right? That it automatically comes to you.

Pieter: And you get beer from the fridge inside your car. It is fully equipped. A kitchen, a fridge.

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<sup>2</sup> The 'Bob' is the person that does not drink.

Q5: Would you like to perform activities that you currently perform in traditional environments - at home, at work - in AV?

If so, do you think you can save time for other things that you want or need to do?

Moderator: Let's see, you've already discussed part of this question. So would you want to do activities that you perform in your traditional environment, i.e. at home or in your car or at work, in the automatic vehicle? Pieter says, sleeping.

Renate: For example, if I talk about traveling with children, I would really like to practice with my daughter while traveling. Speech therapy. Then we have had that while traveling. Because now it is always such a hassle. Food must be prepared, go in bath, then this, then that. That would be a big deal for me. Yes, if I can do that in there, yes.

Pieter: How about preparing food in the car.

Renate: I don't feel like doing that.

Pieter: Then you arrive and then the food is ready.

Petra: I think that many benefits are already well represented in that video.

Moderator: Especially the second part of the question, what would you like to do more? So you have time left, you have more time outside the car, what would you like to do with that time?

Renate: Yes, I also wonder if you are going to have time left. If you are going to organize things differently, you will never have time left. You are going to rearrange it anyway.

Moderator: [gap]

Renate: Yes indeed I hope more relaxation, relaxing things. I hope that very much.

Moderator: The time for speech therapy for example.

Renate: Yes, at the moment I think that a lot of things have to be done.

Paulien: In my case, I no longer have to drive constantly from one side to the other. That would also save me a lot of energy. I always have to go to the customer with my suitcase, that is quite a heavy thing, that would save me a lot of time. Even energy.

Moderator: Yes, so you have more energy at home.

Petra: You can make a studio in your car.

[gap]

Moderator: These things will show up, you will get those pop up stores that are just inside those cars.

Paulien: Yes, just a collapsible treatment chair.

Moderator: Yes.

Paulien: Yes, and you have everything with you. That would be very ideal.

Pieter: Yes, the car gets a completely different function.

Moderator: Maybe this will happen to more services.

Pieter: You get all kinds of extra possibilities with such AV. Just pedicure in the car. You do not go to the people anymore but the people get into your car and in about half an hour or an hour you have made a roundtrip.

Paulien: I do not have to do anything, I do not even have to drive to the next one.

Moderator: No, of course, that will save time.

Paulien: Meanwhile, I can clean up my things for the next one. I must continue to do that myself.

Moderator: Yes, of course.

Paulien: No, that's a good invention, yes.

Pieter: I think some of the activities outside the car, which are now being moved to inside the car.

Moderator: Do you have any more ideas about that? Cooking maybe?

Pieter: Yes cooking, I'm going to think a little crazy, delivering food to your car with a drone. So you're in your car, and the roof opens, and the drone comes to deliver your food.

Moderator: Yes, during the news.

Pieter: Yes.

Renate: Let the AV pick up your groceries at the pick-up point of Albert Heijn, I do not have to go anymore.

Pieter: You can also let your car do some shopping for you. Everything is placed in your car and after that it drives back to your house.

Paulien: I think this is a disadvantage again.

[gap]

Paulien: It becomes too easy.

Pieter: I think this is very striking in America. They will be the first, because this is a bit in the nature of the American.

Moderator: The convenience.

Pieter: Yes, the convenience.

Moderator: Yes, so perhaps more health problems?

Paulien: Fitness in your car, that's possible too.

Renate: It also provides opportunities for people with health problems, elderly, it would mean much more freedom for them, to go wherever you want. But, on the other hand, it can also lead to more health problems, because people become more passive.

Pieter: People do become passive, I think.

Moderator: But, maybe also picking up your grandparents, or pick up your parents who are not able to walk.

Renate: Now, it is true that people of the older generation, women often do not have a driving license. You do not need these anymore. So, everyone could use it. Now, you have to stop driving at a given time because your eyes get worse or other problems you get due to aging, that is all no longer applicable.

Pieter: People that are 100 years old can easily get into such an AV.

Renate: You can just go to the hairdresser with such a thing, those are all small things that are currently issues for people. Taxi and calling.

Pieter: It is fantastic, everyone can drive a car.

Renate: A disability no longer has to be a problem. Disabled people are now limited in participating in society, which will not be the case anymore.

Pieter: Disabled people depend on a van that collects them on fixed times, but it does not matter anymore.

Renate: Right.

Moderator: Thank you.

## Q6: Would you change something in your daily habits if you had an AV?

Moderator: This question is more about your daily routine, your daily habit. Would you change something in your daily routine, and if so, what? For example, you can think of the movie in which Bob normally picks up his daughter from piano lessons, but does not have to do that anymore. Or if he has to pick up his wife at the airport, that he is going there and can watch a movie.

Paulien: Yes, I would. For example, when I go to work or to tennis lessons, I have to bring him. That would be ideal for me, then I do not have to prepare dinner in a rush and bring him, then play for one hour, then I have to wait there again, that is a waste of time for me. If he is brought, I can start cooking.

Moderator: That he is brought by the car, and also is brought back again.

Petra: For me personally it would not matter much because I don't have a partner. I do not have to take my children or my partner into account. So, I have a lot of time and I occasionally get bored. But for people with a hectic family, they will be able to save a lot of time.

Pieter: Definitely.

Petra: They can organize it much more efficient and therefore spend more time with the family. So for them, I understand it.

Moderator: And for yourself?

Pieter: I would change my daily habit.

Moderator: Can you give an example?

Pieter: Also taking someone to the airport. I recently had to bring someone to the airport, but then I would leave that to the AV.

Moderator: Yes.

Pieter: Yes, just long distances are ideal. I think that certain things will look different, work and private.

Paulien: You can combine it better, I think. Everything is easier, smoother.

Pieter: I think I'll leave more to my car.

Moderator: Like the grocery shopping?

Pieter: Grocery shopping, picking up or dropping someone. Mainly these things.

Moderator: Renate, you? With your family?

Renate: I would work inside the car anyway, on my way to work, so preparatory work. I would just stay with my children if I bring them to school, that may also have something to do with age. If they get older then I would. I would, the family of my partner lives in South Limburg, coincidentally I was there again last weekend, that is really, we were 3 hours on the road because we got a traffic jam, back also more than 2 hours. This also raises a threshold of how often you travel to the south. I think we would travel to the south more often, if you could spend the time in the car differently.

Moderator: Yes.

Renate: And that it is also less tiring.

Moderator: That you arrive completely rested.

Renate: Yes actually. It is simply tiring, traveling. Everyone is just stuck, stuck on your chair. Also as a co-driver you're just sitting there. I must say something about reading, I think I would do that? So, I cannot actually read a book inside the car because I will get sick. Watching a movie is still possible, I would still do that. But, I hope that I will not suffer from it anymore. I never tried that behind the computer.

Moderator: [gap]

Renate: No.



## Q7: If you had an AV, would you travel more often or further to carry out your activities?

Moderator: Perhaps, we have also talked about for a bit. Would you travel more often or further to carry out your activities?

Renate: Yes.

Paulien: I would also travel more often.

Pieter: I would also travel further. I would also go on vacation much easier, instead of going by plane.

Moderator: Explain.

Paulien: Yes, I also travel by car to Italy, Spain that kind of places but I also go by plane. Now, I would take the car rather than the plane. I am more a person that really is doing things on the go. Just stop on the way and eat something. Exploring the neighborhood, that's what I like more. My children are, of course, also a bit older. They don't want to go only swimming at the hotel.

Pieter: I think that such AV can be a tough competitor for the aircraft to a certain range. So, up to Spain or within Europe.

Petra: Overseas you will have to fly with plane.

Pieter: The AV is very suitable for a distance of 1500 to 2000 kilometers.

Moderator: Why?

Pieter: Well, look, your freedom, you are in your own cocoon which does the work for you, maybe it will take longer, but you will travel in a very relaxing way to your destination.

Moderator: Airport is still..

Pieter: Airport is stressful, already in the arrival hall, but also in the plane itself. There are incredibly many people in a very small space.

Paulien: All the carrying with suitcases and waiting.

Pieter: It can be very cheap, but that is not a pleasant way of traveling. While this will be a very nice way of traveling.

Paulien: [gap]

Pieter: Well, in Europe, prize fighters, 30 40 euros.

Renate: It can be cheaper, but it is definitely a time gain in many cases. Not always because, I'm thinking, I always go on holiday to [a country in Southeast Europe], but that is also a long drive. If I do not have to steer and just can sit in my car, it would be more comfortable because you can do what you want, but in the end you are still sitting for a day and a half in the car.

Pieter: It is a long time in the car.

Renate: So you go there a bit, you may think now, but you will also push your boundary again.

Pieter: But, if you have all kinds of relaxation possibilities in the car, then it may not matter at all if you have to sit in the car for 12 or 8 hours.

Paulien: Such a foldable chair, you can enjoy ..

Pieter: You can watch movie or games or just something on your laptop.

Moderator: Paulien joins the pedicure.

Renate: Yes.

Paulien: But, if you have such a fold-out chair, you can go to sleep.

Pieter: Sleeping.

Paulien: Yes, sleeping, what you normally cannot do in a car.

Moderator: So, I mainly hear holidays. Family visits, other activities that you would carry out more or further.

Renate: Yes, family trips, to the zoo, amusement parks, that are the things I would do, I'm not going to a zoo in Arnhem for a day, I really have to go for a holiday or weekend away when I would like to do that.

Moderator: So you should really invest in amusement parks at the moment?

Renate: Yes, actually yes.

Moderator: And also [gap]

Renate: Yes, I think that's a very pleasant extra.

Moderator: For restaurants.

Pieter: And maybe such AV also gets a taxi function to use it as a taxi. A kind of competitor.

Moderator: Yes that seems logical to me. You do not need that anymore.

Renate: No.

Petra: If you do indeed pick up people and drop them off again, you do not have that anymore, because they can drop off themselves.

Pieter: Yes.

Q8: Do you think AV is better than other modes of transport for specific types of travel?

If so, for which trips? For example, think of:

- Long / short trips
- Daily / rare trips
- Day / night trips
- Work / leisure travel

Moderator: Okay, this is about how automatic vehicles score compared to normal vehicles for a number of types of trips. You can also think of the plane. For what kind of travel is such an automatic vehicle especially better than other vehicles?

Paulien: Well, for PT that only drives until 1 o'clock.

Moderator: Yes, so especially night trips.

Paulien: It would be ideal for that.

Moderator: And [gap] both work and leisure.

Paulien: Yes leisure trip.

Moderator: More than work?

Renate: No difference for me.

Moderator: And long or short trips?

Paulien: Those leisure trips, that is always very early somewhere to collect all the people, that is not needed anymore. Because if you arrive somewhere at 9 o'clock you have to collect all the people at 6 o'clock.

Petra: Leisure travel is also about the ability that you just can go to an amusement park right?

[gap]

Moderator: So, also going to your family.

Paulien: I really thought coaches.

Moderator: No. And long or short trips?

Pieter: Long.

Moderator: Yes?

Pieter: Yes.

Moderator: Yes you would still do that? Cycling?

Petra: I sometimes go by bus and bike to Rotterdam. With the bike you have your exercise part and your fresh air. I do not have that when I use such a car. So, I would not use it for such a ride.

Paulien: I already never travel by public transport, if you have a car, you just don't do that. I almost do not cycle anywhere, also for the groceries I take the car. You never know, how heavy it gets, you go for one thing but you never know.

Pieter: Sometimes I'm so lazy, that I do not even walk 2 streets to the supermarket, then I go by car.

Paulien: [gap]

Pieter: Yes.

Petra: And parking, if you have to be in Rotterdam, public transport is easier.

Renate: No, those problems are all solved.

Paulien: But we have to think about that.

Moderator: This is mainly about long journeys, but also rare daily rides and is there a difference?

Petra: No, because every day you have travel time to work and the same holds for a rare trip to your in-law.

Moderator: And for both day trips and especially for night trips it is very handy.

Renate: You may also travel more during the night. If you can really organize your rhythm in such a way that you can actually sleep inside it.

Paulien: The rush hour also. The subways are completely full, you can avoid that.

Moderator: Yes.

Paulien: When you travel with the AV.

Moderator: Renate, that is an interesting point. So you think people or maybe you are going to travel at night.

Renate: Yes.

Pieter: You're going to travel more at night, you said?

Renate: Yes. It has to fit with what you are going to do of course, but why not. Imagine you are going ..

Pieter: Now, you use the night to sleep at home but that is also possible inside the car.

Renate: You can do that inside the car, even if you are less on the road than the whole night, I imagine going to Disneyland for a day, then we get in in the evening, inside the car, then we can all sleep and then you arrive in the morning at 5 o'clock, you just set the settings like this, then it parks itself in the parking lot. Then you just wait until you are awake and then you are already there.

Pieter: Yes.

Moderator: And then you can start right away.

Renate: Yes. That would be possible.

Moderator: Those theme parks are going to..

[gap]

Moderator: But, I have heard this on several other points. People may be there longer because you can get inside the car in the evening and be there in the morning.

Paulien: It's fun for the kids, but you do not have to do it every year. [gap]

Moderator: Okay.

## Q9: Would you consider moving if you had AV?

Moderator: Moving, would you consider it? Imagine that.. yes?

Paulien: Yes, I live in a nice place at the moment as well, it's just a village. But, when I would live in the Randstad and work there, I would be living in one of the regions around the city.

Renate: So further away from the city?

Paulien: Yes. Then I would move.

Moderator: Why?

Paulien: In my case, for children I think it's better not to live in the Randstad.

Moderator: What is worse there?

Paulien: The crowds. Culture.

Moderator: Okay, Clear.

Pieter: This question has to do with the fact that you often live close to your work for example, and that you also often have traffic jams and that you, how do I explain this?

Moderator: Yes, I understand what you mean.

Pieter: Imagine you do not want to travel an hour and a half with, a lot of traffic jams, I imagine living in Rotterdam and working in Amsterdam, the question has to do with that.

Moderator: Or you, it could be all sorts of things, so for example you still want to live very close to your family. This is not necessary anymore. These kind of things. So maybe there are a number of barriers that are removed, or the other way around - arise, which may change your location choice.

Paulien: That was [gap]

Petra: He now has more time in the car, so his journey time is less important.

Moderator: Yes exactly, so he is going to live in the countryside.

Petra: No, I would not have to. I do not see myself living in a village or in a rural area. It is, of course, nice that you can perform a trip more often to go there. I need people around me.

[gap]

Petra: You can often say now: I am going away for a weekend, to get some rest.

Renate: It does not affect me either. I would not move for it.

Pieter: No, I would not move there.

Moderator: Then, for the people who answered no, imagine you have to move, imagine that for whatever reason you should move, would the fact that you have an AV influence the choice for your location?

[gap]

Moderator: Imagine you get a job on the other side of the country, imagine that this happens, maybe that is difficult to imagine but imagine that this happens, so you have to move for that job, would the fact that those AVs are available influence your choice of location?

Renate: I still do not get it, because you have .. Why do you have to move for your job?

Moderator: Imagine that you have to live in Utrecht, why I cannot imagine, but imagine that this is plausible.

Renate: That you have to live within a certain travel time or radius?

Moderator: Yes.

Renate: Or within so much time?

Moderator: Rotterdam and The Hague are flooded, I don't know, an assumption that you have to move, to Utrecht or somewhere else, would the fact that you have such an AV at your disposal influence your choice of location?

Pieter: That you can still get be located far from your work?

Renate: Yet?

Moderator: Yes.

Pieter: Because you have such AV?

Moderator: Yes.

Pieter: Yes, such AV makes it a little easier, that you do not have to live very close to that place or in that place itself. The AV makes it easier to move, to live further away.

Moderator: But Petra you would want to live near the city right?

Petra: Yes.

## Q10: Would AV make your life better or worse?

Moderator: Okay, now this one. Yes, that is actually the final question. Will such an automatic vehicle make your life better or worse and why?

Pieter: Well better.

Paulien: 90% better.

Pieter: Time saving, more relaxed, you can do much more, you can continue working in your car.

Paulien: You can organize everything better.

Petra: Better if you [gap]

Renate: Yes if you don't misuse it.

Pieter: No traffic jams, no accidents with those cars.

Petra: I think it's safe and there will be no traffic jams.

Pieter: Much safer.

Moderator: The 10%, I am curious about that.

Paulien: Health.

Renate: The convenience, I am also afraid of that. That you become lazy.

[gap]

Pieter: Yes, that situation already arises, because of all kinds of innovations that make everything easier for people. For example, for food, ready meals, sometimes you do not have to leave your car. Mac Donald's, these drive-throughs. It is all made easier. So, this is kind of a logical consequence.

Moderator: Yes, but don't you think these things are an advantage?

Renate: Well, I see the benefits of it, but that is why I say: if you handle it wisely.

Petra: [gap] that you more and more, that is a footnote. But indeed enough advantages, you have more quality time.

Pieter: Of course, your employer may also expect that you work inside the car. You have an AV, so you can work in the car for 3 hours.

Renate: If that is during working time, it is not that bad of course.

Pieter: But I do not pay for it.

Renate: Maybe that will change too.

Petra: Maybe your working days will become shorter, so that you will not have an 8-hour workday but 6 hours.

[gap]

Moderator: Yes, that is also interesting, I personally find that interesting. How this will look like. What working days will look like. And for you Renate, better or worse?



Renate: Yes better, if we don't misuse it.

Moderator: And this is also what you think Petra?

Petra: Yes better, because now you do everything quickly, you can do it more relaxed by then. It is freer, you are comfortable, you do not have to pay attention to traffic.

Paulien: Hasty.

Petra: Yes the haste disappears.

## Any questions to us?

Moderator: Are there any questions left? We are a bit faster, because we are just with four people today. Did we miss anything?

Renate: What are you going to do with the research?

Moderator: It is mainly organized from our university, but it is also financed by the government. It is set up to get a perspective on what could all change. Baiba is mainly elaborating various scenarios, what could happen. If you already know those scenarios then you might be able to take that into account with the investments you are making now.

Petra: It will take many years. It might be there when I retire, I might experience them.

Moderator: No, but if you are making big investments now, and you have the choice between two options, [gap] and the other one, you know that the one is a bad investment, when those things come to the market, then you can take that into account.

Petra: I understand that these are things that need to be implemented to stay innovative.

Pieter: This will of course happen. Only during development you suddenly get all kind of questions. Suddenly all questions show up.

Moderator: What Pieter just indicated, this could also be useful information for airlines.

Pieter: Actually it is.

Moderator: There will be a big competitor, also for amusement parks.

Pieter: It will also frighten certain companies. They might want to stop it, these kind of things.

Moderator: That could also be the case.

Pieter: Indeed, bus companies, airlines.

Moderator: Taxi branch?

Pieter: Yes, taxi branch.

Moderator: Yes, there will be entire industries [gap], but there are also industries that are going to have a hard time. It is therefore interesting for the government and perhaps also for business, to take a look at this topic.

Paulien: But also employees at the supermarkets, if you think about that.

Petra: Yes.

Pieter: Yes exactly.

Petra: I recently read that in 10 years there will be many jobs gone, which now still exist.

Pieter: I think you get a kind of shift from jobs.

Paulien: But you might also create other jobs with it.

Pieter: Yes, on the one hand you are going to create a lot of jobs, and on the other hand a lot will disappear.

Moderator: But it is good to do research on this as a government. We have already collected a lot of different ideas from 5 focus groups.

Petra: Different per focus group?

Moderator: Yes. There are really things that are mentioned one time and not the in another focus group. I try to give directions as little as possible, but that is also interesting. Certain things are mentioned again and again.

Pieter: Because on the one hand, I wonder, the government will be very happy with these kind of things. Because everyone is going to keep the same speed. But the CEB can close.

Moderator: CBR<sup>3</sup> too. That is also the thing that is very interesting, every focus group the point about those small leisure trips has shown up. While that was not expected in advance. But it comes back every time. For example, I would start to go to Paris for diner.

[gap]

Moderator: But it does mean a lot of extra traffic. So that is an important point again. How are you going to do that?

Paulien: Make roads wider.

Renate: I have not realized that either, I was talking to my boyfriend about the fact that I was participating in the research, he mentioned that, I had not even thought about it. That it is so easy for everyone and everything to drive a car. Everyone travels even more than now.

Pieter: I think that car use will be explosive.

Renate: Yes, that's what he said.

Moderator: That is also the question, how are you going, those cars can be closer to each other, of course, but it will certainly increase.

Pieter: We will all drive 30 on the highway.

Renate: Yes, maybe that will be a consequence for the motorways.

Pieter: Yes, I think the speed will go down. The maximum speed of 130, that is going down anyway. Maybe to 90 or something. If cars on the road.

Moderator: Maybe yes. So we make a complete overview which we are going to present, I do not present it.

Petra: You just wanted to say something?

Moderator: No, but I cannot influence you. But everything is recorded.

Pieter: But it is interesting.

Petra: When they come to the market eventually they will have some beginner mistakes, so to speak. First all problems at the beginning phase have to be removed.

Pieter: They are testing it in America, and last week there was such a AV that crashed into a car, so that did not went well. They just released it somewhere in San Francisco.

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<sup>3</sup> Centraal Bureau Rijvaardigheidsbewijzen. Responsible for conducting driving exams.

Moderator: What is going to be a problem anyway is that car is probably taught to brake if a child or something crosses. But, what you are going to see is that, you as a pedestrian can always cross in front of such a car.

Renate: Yes, that kind of things too.

Moderator: It could be that those things do not appear in cities at all, because it cannot be realized technically.

Pieter: That they are banned from cities?

Moderator: Yes, could be, you do not know. In cities as pedestrians you just cross the road, the car always stops. Those cars are no longer able to move in a city.

Paulien: Yes, but also for the passengers, you are just playing a game inside the car and then the car suddenly brakes. How does that work?

Moderator: It is also about urban development. How do cities look like? Can there still be cars?

Pieter: Then there is no environmental zone but a zone for no AV.

Moderator: So they are already thinking about that now. Can you already take that into account when designing cities? We are going to see what will happen. Thank you.