TOWARDS INCLUSIVE TRANSPORT; THE RADICAL APPROACH

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6.1 Introduction

In this final chapter I will propose a radical approach to arrive at real inclusive transport for all citizens. Inclusive transport has two connotations, a weaker and a stronger. The weaker connotation is to realise a transport system that does not lead to social exclusion of households and individuals via transport. The stronger connotation is *to create a transport system that maximises to possibility to meet, via mobility, all sorts of people, and is basically about the power of joint experiences, dialogue and creating community via transport and transport services.* The weaker connotation can be reached by offering specific services, although - , in chapter 5- we already have seen the difficulties related to this solution. The stronger connotation should ultimately lead to another objective, to reach stronger and more creative communities via offering transport services. This is about sharing modes, and about sharing experiences when travelling. And it is about social cohesion.

Creating inclusive transport should not be done in the blind. Already too often creating accessibility is seen as a sort of "stand-alone objective". In the coming decades when inclusive transport should be realised OECD countries also have to create sustainable mobility, in accordance with achieving the objectives formulated in the Paris Agreements on the fight against global warming. This means that policies to create inclusive transport should be connected to policies to create real sustainable mobility.

At his moment transport and mobility in all OECD countries are still completely unsustainable. Big transitions are needed to reach inclusive transport and objectives to fight global warming. *Transport at this moment the most "unclever kid" of the family of societal sectors when it comes to reaching goals in fighting global warming*. Transport is even the only societal sector still growing in CO2 – emissions (IEA,2016). With policies formulated thus far transport will never deliver the contribution expected from the sector. Transport will the way it now looks, be dependent on results in other societal sectors, who then need to help transport. This looks now still accepted, but will be far more difficult in later decades, when also agriculture, energy, households and industry will be faced with steeper hills to climb for reaching their objectives of the Climate Agreements. Intersectoral equity considerations will almost certainly move in, probably some 10-12 years from now. Mobility and transport will be questioned on their lack of delivery and performance. And as it looks now, the transport sector then still has little to offer, with an electrification of the passenger car fleet being at probably highest some 20 % of the total fleet, and kerosene and bunker oil problems still existing in great magnitude!

It is time to start considering new ways of providing transport. But here, most decision makers are reluctant, still being trapped in older ways of thinking on transport, as was explained in chapter 4. Their reluctance finds its deeper source in the functioning of our modern western societies. In 6.2 Modern

Society and Inclusive Transport I will present the state of art of modern societies, their characteristics and their connections to transport and mobility. From the actual situation it will become clear that reaching inclusive transport is indeed a radical goal. In 6.3 the role of transport in fighting global warming, and the relation to inclusive transport and sustainable mobility will be presented. In 6.4 the actual existing knowledge on these themes will be presented in a somewhat innovative way, as I will look at ideas and insights or each time three researchers (a “triumvirate”) in four countries United Kingdom, Germany, France and Australia. The insights and wisdom of these 12 researchers presents a rich basis for an approach. This radical approach will be sketched in 6.5. And this book will end, in 6.6. , with a few “take away’ s”.

6.2 Modern Society and Inclusive Transport

6.2.1 Characteristics of modern societies

To introduce a new radical approach it seems necessary to understand, at first, how societies in the OECD world function. In chapter 4 already many elements were sketched. For example we noted a huge bias towards seeing transport as an important motor for economic growth, and economic growth as an objective in its own right. And we saw a majority of households subscribing to what I introduced in 4.5.2 as the Car Dependence Organisation CDO, with this behaviour marginalizing the non- car owning households and individuals. And we noted the role of the car in taking and giving control to individual lives.

But behind this there is more to be characterised. *The dominant mode of transport in all OECD countries is an individualised mode.* And it is a mode that, although it creates many known problems, is still increasing. The car is an expression, and one of the most clear ones, of a dominant culture and attitude in modern western societies.

Modern societies are increasingly characterized by their complexity. There has been a wide growth of consumer products. And this growth has made modern society first and foremost a consumer society. Consumerism leads to a variety of lifestyles. In this process, traditions get weakened. The individual does no longer follow dictates of societal traditions. His or her choice of consumer articles, therefore, seems his or her personal choice. Modernity also emphasizes individualism. Although there is always movement, the individual often finds himself lonely. He or she can feel isolated and alienated from most people, as there is no real sense of community. He or she often lives a rather hectic life, rushing around from house to shops, schools, office or workplace and back and forth again. This rather often leads into mental stress. In the western countries, the wide prevalence of tension and stress is an important “extra product” of modern hectic life. And at the core of modern western societies stands technology and globalization. Our societies are based on technologies and solutions are often searched for in the sphere of technological fixes. Many practices of modern life originated in globalised decisions or arrangements, such as flying.

Modern societies with this basis in individualism and consumption find their dominant ideology in *neo-liberalism.* Neo liberalism has a number of ground rules such as (Jessop, 2015, Corp Watch, 2017);

- The rule of the market, with the idea that an "an unregulated market is the best way to increase economic growth, which will ultimately benefit everyone." However , some of the wealth does not seem to trickle down very much.
- Cutting public expenditures for social services such as education and health care, plus reducing safety nets for the poorer households and individuals.

- Privatization leading to selling public owned enterprises, goods and services to private investors, usually done in the name of greater efficiency, see for example the privatization of British Rail.
- And eliminating the concept of “public good” or “community” and replacing it with "individual responsibility." Everybody should try to be happy on its own.

In neoliberalism “*the technologies of the market work as mechanisms through which persons are constituted as free, enterprising individuals who govern themselves, and, consequently, require only limited control by the state*” (Sugarman, 2015). Stability is not an important value in neo-liberalism, and the same holds for cohesion. Neo – liberalism creates contracting societies, with legalistic frameworks and risks ploughed back to individual people.

This neo- liberal ideology leads everywhere in the OECD world to private prosperity and public poverty. The ideology seems stronger in Anglo Saxon countries such as the United Kingdom or the United States, and weaker, but still dominant, in countries like France, Germany, or in Scandinavia.

Most households, with their majority vote, keep this neo- liberalism on track, and seem to accept private prosperity and public poverty. Although they often complain about manifestations of this public poverty such as weaker arrangements for care, or worsening conditions for teachers, in majority they still support the neo- liberal ideology. The reason for this somewhat ambivalent state of mind is the enormous increase in consumption offered to most middle class households. They have seen their individual prosperity rise, cherish the possibilities offered by that prosperity, relate their prosperity back to economic growth and are thus in favour of economic growth the way they have seen it in the last decades. Yes, they see the worse sides of sustained economic growth, they see the flaws and pitfalls of the neo- liberal ideology, they feel that global warming could be a result of their choices, but getting more prosperity, more goods, and greater consumption remains for most households more important. And yes; in this respect neo- liberalism did deliver!

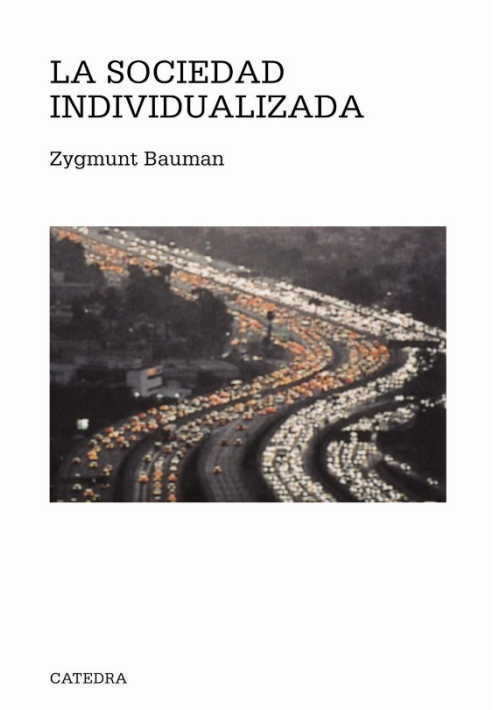
6.2.2 Individualism and its consequences

What do most households in modern societies experience in their day to day life? A dispersal of locations to visit; their shops are located at a distance of their offices, and the leisure locations are again somewhere else. There is a need to travel. And just as elements in space are split up, elements in time are. People live in instant time, great flexibility is being asked for, stress and burn - out are rather normal. And many households seem to feel rather vulnerable; everything is now working fine, but there is an anxiety whether this will remain so. Where the households live there is mostly no sense of community, and “community light” is the best to get. Friends and families live, again, at a distance. But this all is accepted for private prosperity, at least for the majority of households. This is a politician’s wisdom ; as long as the great majority of voters, the 65 % middle class households remains satisfied, we could go on with our job. Everything is arranged at getting satisfaction from this enormous group of households. I have felt this bias when I was a member of the Dutch Parliament myself. And because the rich will in majority support the incumbent regime (that they more or less design and maintain) the key focus of all politicians in OECD countries is on this huge middle class.

However, there are two important impacts. The first is the marginalisation of the poorer households. Their conditions are often worsening, and the same could be true in coming years for the lower part of the middle classes, in OECD countries the societal group most vulnerable for populist right wing politicians. I will discuss this in 6.2.3

And the second is that anxiety is rather endemic for most middle class households and individuals. They cherish their prosperity, but are afraid of losing it. And they are afraid of many other elements,

as they have lost forms of community. They are being held responsible themselves, for their luck in society, for their choices. That is, as we saw, a key element in neo- liberalism ; “eliminating the concept of “public good” or “community” and replacing it with "individual responsibility." Everybody should try to be “happy on its own.” Most richer OECD countries are individualised, meaning that individual solutions and life trajectories are seen as more appropriate than collective or group solutions. This individualization starts with a feeling of one’s own characteristics, “this is who I am!” Individualization leads further to two important elements; the freedom to make your own choices, and the feeling that you are responsible yourself, that you are alone in the responsibility of your life and your choices (Elchardus,2016, van der Stel, 2004). Starting with this last element, the self – reliance, your autonomy.



You cannot fall back into strong communities. We already noticed that there are “community light’s”. Individual people find it hard to trust other people, and especially people that do not instantly look or act familiar. A fear for strangers has grown (Denyss, 2017) and has added to the “*longer standing encapsulating effect of capitalism”* (Lutz, 2015) a new element, as people, at least in the United States have “come to travel between “safe”, enclosed spaces like malls and security – guarded camera homes in a private car” (Lutz, 2015). There is a great need in modern societies for predictability. And that need is quite often not met in the public sphere.

Moving to the first element, the freedom to choose. From longitudinal studies we know that people have kept many family values, but that hedonism has grown in the last decade (CBS, 2015). With this hedonism “instant gratification” has increased as an important value in modern life;” *I want it, and I want it now!”* And as we seem to choose so much the same products and ideas, in this area there is predictability, stemming from data, and used by commercial parties, steering our lives with clever messages and thus subtle influencing choices. Here modern individuals just like to feel accepted in their choices, and in what they like to see as their individuality.

Individualization creates new possibilities, but could also lead to fatigue as you need to be self-reliant. Part of this fatigue springs from the circumstance that in modern western societies flexibility and adaptation to new situations seems to be needed constantly. Modern lifestyles are inextricably linked to mobility. But, as Bertolini (2012) shows, there is a paradox. Mobility also becomes a necessity. There is a form of “*coercive flexibility”* in modern life (Urry, 2004). We are “time scheduling normal life”.

And here the car comes in. The car is a great “*flexibility machine*”. And one level deeper Kent (2013) explains that modern individualized people need ”*ontological security*”, operationalized via predictability, acceptance and autonomy. In her view the car provides wonderful for this ontological security. The car also can be used instantaneous, which is useful for hedonistic choices, but also useful for tired people. Tired and fatigued persons often lack openness to the world. And also here the car offers important assets; predictability, and moving away from public spheres, moving in your own cocoon. In the rather strong words of Lutz (2015); “*While the car was and is still marketed as a ride to freedom, it is now also marketed as a lifeboat in a sea of car-jackings, hurricanes or terrorist attacks”. In the car you can feel safe in your own predictable world, avoiding any contacts with strangers*.

So whereas individualization started positive, fatigue, fear for strangers and wishes for predictability are also produced, and these emotions form a great stimulus for car use. Driving alone in your own car is the best expression of a limited community feeling in modern societies, where many anxious and tired individuals are living. No other transport mode could ever give these individuals such a heaven in a heartless world! This leads to rather schizophrenic practices at the individual level as La Branche (2011, 2012) did show in two interesting articles on households in Lyon, who tried to be environmentally friendly, but felt unable to change to, in their eyes, more environmentally friendly modes of transport. The car is just too supportive and too helpful for living individualized lives.

6.2.3 Segregation of mobility experiences ,lack of trust and social cohesion

It now looks as if there are car dependent households (a huge majority) and involuntary transport disadvantaged households (a minority) who have very little experiences and interests in common. One could state that ***there is segregation in transport***, with only a small intermediary groups consisting of choice travellers (sometimes the car, sometimes other modes for longer distances) and households in the situation of car related economic stress. Here the second, stronger form of Inclusive Transport comes in.

Inclusive Transport - in its stronger definition- relates to a transport system that maximises the possibility to meet, via mobility, all sorts of people, and is basically about the power of joint experiences, dialogue and creating community via transport and transport services. Inclusive Transport is about shared mobility, could be in cars, together on bikes, or on public transport. Essential in this stronger connotation is the wish to meet and to travel with other people. Trusting people is than a "condition sine qua non"!

Whereas trust is an element at individual level, social cohesion works on the societal level. Social cohesion has many definitions. Two will be presented here. At first the definition of Larsen (2013) who sees social cohesion as *"the belief, held by citizens of a given nation state that they share a moral community, which enables them to trust each other".* And Koonce (2011) describes social cohesion as "*measure of a society's members' willingness to cooperate and their autonomous action in support of norms that already exist within a society*". At a small distance of social cohesion is the concept of solidarity (Dekker et. al, 2013) , seen by citizens as "together" and "helping each other".

Countries differ in their level of trust and social cohesion, and in their level of solidarity. As Larsen (2013) shows countries such as the United Kingdom and the United States score far higher in the distrustful mode on a question "would you say that most people can be trusted- or- that you cannot be too careful in dealing with people? " compared to the countries of Scandinavia, Germany or the Netherlands. Part of the explanation of such a lack of basic trust seems to stem from the strong neo-liberal path in the former countries that created a poor and deprived underclass. Citizens in these countries in majority consider it normal that in their society a distinct underclass culture exists which disregards society's broader norms and values, whereas in the latter countries a majority considers citizens at the bottom of their societies as in essence trustworthy and peaceful. The United States and the United Kingdom, or more in general, countries where the neo- liberal ideology strongly dominates have lower levels of social cohesion, partly because leading decision makers in these countries are not creating conditions favourable for social cohesion, such as fair policies, equity, and increased bridging in social capital (Koonce, 2011).

Trust can be destroyed relatively easy, as Milbourne and Cushman (2013) show, especially when a trust basis gets superseded by formal client/contractor relationships, as often happens in the New Public Management, a management style based on the neo- liberal ideology. In many countries traditional

grant- based relationships have shifted to contractual arrangements, undermining dialogue and trust. And trust is lower in societies with greater inequalities as Delhey and Dragolov (2013) did show, as inequality makes it more difficult to develop a sense of togetherness, which is important for trust". Inclusive Transport with people with high levels of distrust will not work.

All in all, there seem to be two rules of thumb, the first being ; *stronger neo- liberal oriented countries create distinct underclasses, higher inequality rates, lower trust, lower social cohesion, and smaller chances for Inclusive Transport.* And the second would be *; less neo- liberal oriented countries see poorer households as normal part of society, have smaller inequality rates, are higher trust societies, have a greater social cohesion and create more chances for Inclusive Transport*.

When these rules of thumb are correct it is clear that most Anglo Saxon countries have longer routes in realising Inclusive Transport than most Western European countries. An extra argument could be that in countries with strong neo- liberal policies highway locations are seen as just normal, whereas in countries with less neo- liberal policies the culture of integrated land use planning has remained somewhat stronger. And we know that highway locations are in essence car locations, with a strong bias towards single occupancy (Jeekel, 2011).

A caveat is here at its place. Although we could argue that in countries with greater social cohesion and more trust the starting position to develop Inclusive Transport is better, it is still the personal choice of individuals whether or not they would like to share mobility. Here it would be interesting to see whether the Secessionism as described by Mattioli (2014) (discussed in 4.7) differs strongly among countries. And it would also be interesting to see whether the so called " ontological security", operationalized via predictability, acceptance and autonomy, mostly leading to individual car use (Kent,2015) differs among countries. Unfortunately, to the best of my knowledge there is no research done in this domain.

Concluding*, you need to have a high trust society, and strong public institutions that wish to invest in social cohesion to realise Inclusive Transport* in its strong definition. For the weaker definition, meaning offering specific services for households and individuals facing involuntary transport disadvantages, it seems at least necessary to frame these households and individuals not as just members of an underclass. It seems that OECD countries such as Denmark, Sweden, Germany, but also Japan are in far better positions in reaching Inclusive Transport (strong and weak definition alike) than countries such as the United States, Australia or United Kingdom (with probably an intermediate position for Canada). Especially in the United Kingdom, with its rather elaborate research on involuntary transport disadvantages, and it's almost complete neo- liberal policy practice the gap between academia and government policy seems enormous!

6.2.4 Neo liberal landscapes and perspectives for inclusive transport

Neo- liberalism also finds its expression in the look of the land. There is no integral land use planning, and thus a great dispersal of functions, buildings and parking spaces over vaster territories. And individual mobility is cherished and supported.

Two neo- liberal landscapes will be presented here, with the Netherlands as an example. At first the highway locations for work.

At this moment 40 % of the Dutch employment is at these sort of locations, and this share is still growing. These employment areas at less than 1,2 kilometres from an entrance lane to a highway grew fastest in the first decade of this century. What was created were great mono- functional landscapes of buildings looking like boxes, with sometimes a hotel, furniture- or Do it Yourself – shops. But mostly it are just working landscapes, with “fast architecture”, buildings from a prospectus.

Were these landscapes ever designed, were they planned? Let me give the answer via the PBL, The Dutch Planbureau voor de Leefomgeving (Netherlands Environmental Asssesment Centre) (2016): “*Municipalities developed new industrial and office zones along highways. The buildings have a functional and abstract design. There are no public services to be found. And the new places for work are only accessible from the highway*” This is all stated rather neutral, but behind this is a quite

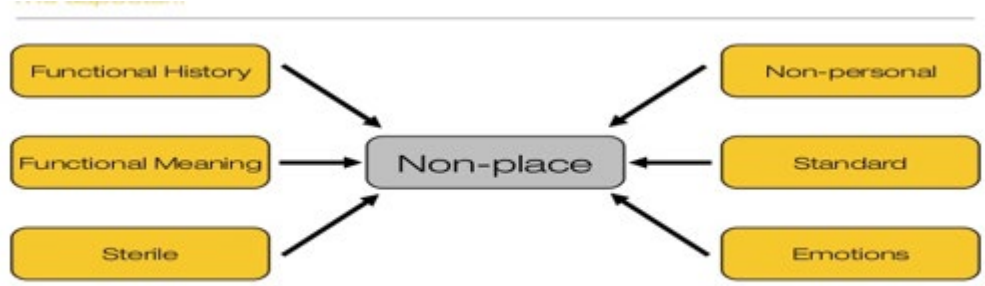
interesting phenomenon. Who was the leader in development? The municipality. The same municipality that tries to convince citizens, with their Local Sustainability Agenda 21, to split their waste in several boxes, that proposes an integral view for their central areas , creates at the same time areas that can only be accessed by the highway, that have no real public space, and that are completely mono- functional.

And secondly the highway locations for housing, the so called Vinex areas, and specific the ones build at a distance from the city centres. Under the Vinex rules, neighbourhoods, or better complete citylike structures have been built, mostly some 10 kilometres from the real city. Most Vinex areas had to be built via an intricate interplay between the business community world and the public organisations, with a business model related to value capturing on ground positions and project development. National physical planning was already weakening at the time these Vinex locations were build, and neo-liberal ideology was on the rise. All these Vinex neighbourhoods (built between 1993 and 2006) share the same characteristics; a whole spectrum of housing types, a struggle to create functioning shopping areas, a lack of other functions, a great physical and also psychological distance to the original city they seem to belong to, and on average rather happy inhabitants.

Where this Vinex reality also has led to is described in a great manner by Arnold Reijndorp in 1998. In his Buitenwijk he uses Haagsche Beemden (see also 5.4) as an example. The inhabitants of Haagsche Beemden oriented themselves to locations within easy reach via these highways. These inhabitants

liked their house, were often rather indifferent to their neighbourhood, but liked the location of their neighbourhood on the Dutch map; everything is within easy reach, at least by car. The possibilities that the highway offers in terms of reaching other cities is far more important than their orientation towards the city of which they form the utmost outlying part (sometimes over 10 kilometres from the city centre). They did not feel inhabitants of Breda, the city of which Haagsche Beemden is the most outlying part. And social life for these inhabitants was not concentrated in their new neighbourhoods. Their Vinex neighbourhood is just the first step in the wider spaces where they live and create their activities.

What is now happening around those highway locations for work and in these Vinex areas is what the great American urban planner Melvin Webber came to expect in 1964 when he created his vision of the "*urban non – place realms*" ,areas that belong nowhere but are functional in all circumstances.



Behind all this lurks the neo- liberal ideology. Car dependence is with us in all OECD countries, at least outside the big cities. And car dependence is increasing at a far faster rate than car use. As now around 45 % of all car trips cannot be made in a reasonable way by other modes (even as they are allowed to be 70 % slower), and this will increase in the next decade to 60 % (Jeekel,2013). This growing car dependence in all western societies has un- intentionally got the characteristics of an extreme liberal project, liberal in the sense of that high priest of neo- liberalism, Margaret Thatcher, when she spoke her famous words; "*there is no such thing as society*" (Jessop, 2015). The car fits perfectly in a system to let everybody be happy in its own individual way. Except than for the laggards, but here we have that other great quote of her; "*when a man of over 26 is still on the bus, he can consider himself to be a failure".*

In all this – individualism, segregation in mobility experiences, neo–liberal landscapes- the idea of inclusive transport is far away! Fundamental , in my vision, is the lack of trust in other people, that is starting to dominate in most OECD countries. This lack of trust finds its basis in the wish not to connect with others (stemming from the individualistic bias ; why should I get acquainted to other people?), in the lack of need to share (I can buy everything myself, why should I share?) and in the fear for strangers, mostly constructed by the media. This lack of trust forms the basis for the diffuse anxiety that is endemic in middle class households in modern western societies.

Here again, the car has to come in. Cars make it possible not to connect, do not need to be shared, and can act as an "iron cage" against strangers. And your wish for predictability can , at first instance, be satisfied better with cars, than with public transport. That is probably also why congestion is hated, bringing you out of your "comfort zone of predictability".

All in all, the ground rules of neo-liberalism on spacing, timing, and financing public services produce time and time again locations and practices that lead to car dominated mobility, to car dominated passenger transport and to neo-liberal landscapes.

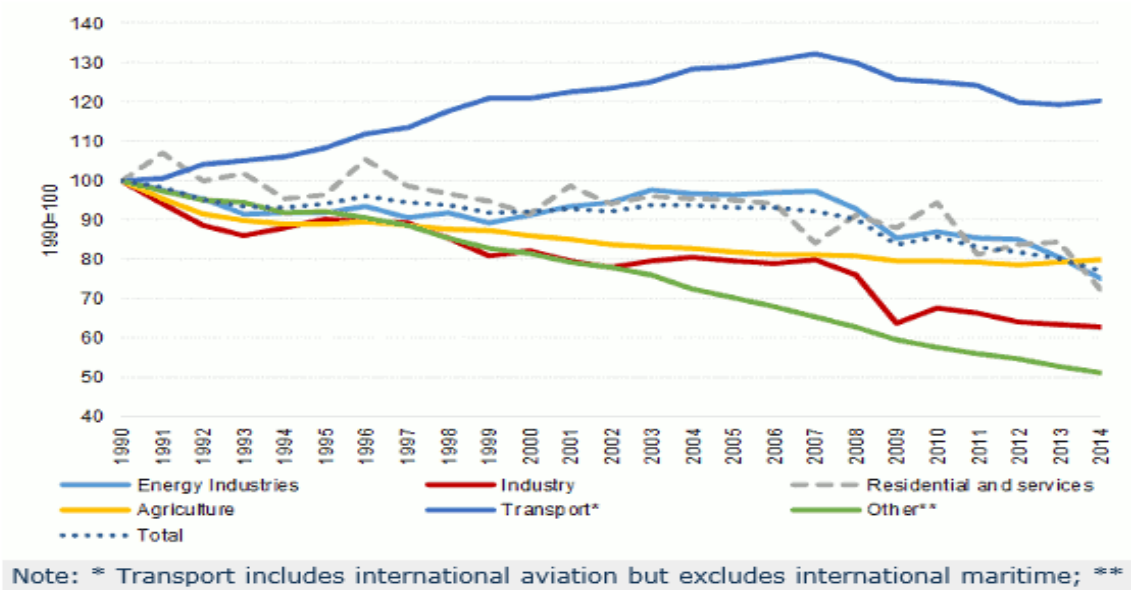
This means that a core concept in this book , Inclusive Transport, is , seen from the perspective of the incumbent regime, a revolutionary concept! Realising the stronger form of Inclusive Transport has a direct relationship with trust and social cohesion. *Trust is essential in Inclusive Transport*. When individuals and households fear sharing travel, just considering their fellow human beings as strangers, Inclusive Transport can be a burden. What could be a result for inclusive transport is presented in the figure. There will remain a group of private car- lovers, but for the other "mobilists" there is an exchange, made possible by opening up individualised car travel.

6.3 Inclusive Transport and Sustainable Mobility

6.3.1 Reaching global warming objectives in surface transport

Looking at the academic literature and at the policies on mobility , reaching social inclusion via transport, or Inclusive Transport is often framed as a stand- alone subject, as theme on its own, somewhat aside of the mainstream of transport problems. This is not my starting point. I consider reaching Inclusive Transport as part of a far broader battle, the battle to reach in the next three decades a world mobility that fits into standards of sustainability as defined by the World Commission on Economy and Environment (Brundtland, 1989). Reaching Inclusive Transport is an important cornerstone in getting transport and mobility out of the areas of pollution, decrease of resources and inequity where it is now, already for four decades firmly stated. The way we have now organised mobility, in the OECD countries at first, and later also in the global world, produces each and every day pollution and inequality. This should stop.

Placing mobility and transport in the broad spectrum of societal sectors the situation is even worse. As IEA (see figure, 2017) has shown, transport is the only societal sector that has not been able to reach a decrease in CO2 emissions. In this respect mobility and transport has a "*status aparte*" being the weakest kid in the school for decreasing carbon footprints!



Note: * Transport includes international aviation but excludes international maritime; **

The difficulty in reaching the needed CO2 emission level in transport was already acknowledged in the influential Stern Report, The Economics of Climate Change (2006); "*transport will be among the last to bring its emissions down below current levels, because the low carbon technologies tend to be expensive and the welfare costs of reducing demand are high".* Two remarks have to be made here. The first is that in 13 years from 2006 transport as a whole has not even come on the right track. And the second is that with Stern's position in mind, other societal sectors have to support mobility and transport in reaching CO2 levels. However, there will probably be a boundary on this intersectoral solidarity.

Moving to the theme of this book, passenger transport, the situation is somewhat less problematic. The greatest increases in CO2 emissions stem from maritime and aviation (Creutzig et.al, 2016). Passenger mobility is more or less stable in its CO2 emissions. But it remains clear *that Inclusive Transport should be reached in a situation and in a timeframe where creating an organisation of passenger mobility that is carbon neutral will be the greatest challenge*. Stated the other way around; reaching carbon neutrality in passenger mobility could be a motor for reaching Inclusive Transport.

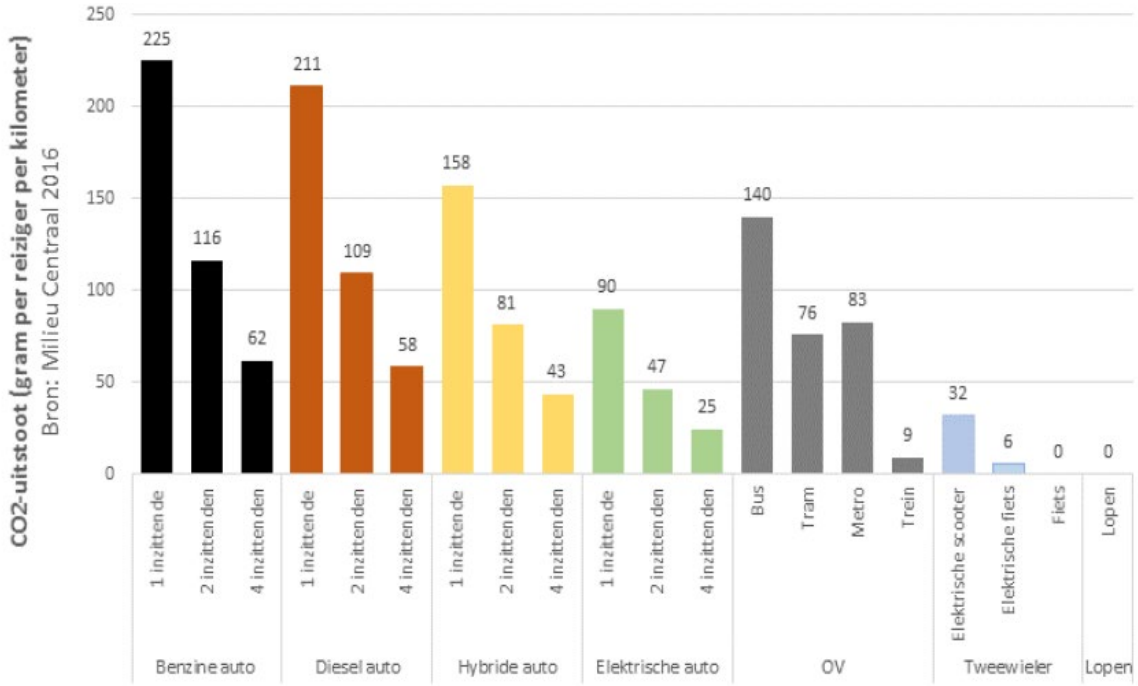
What is the actual situation on mobility and transport related to global warming in the policy domain? The IPCC AR 5 indicates that stabilization of CO2 emissions in the transport sector by 2050 at roughly 2010 levels would be consistent with the 2 degrees global mean temperature increase target (i.e. 430 to 480 parts per million (ppm) CO2 equivalent). However, as Creutzig et.al (2016) write, this transport mitigation burden is conditional on emission reductions in other sectors, and the 2050 burden is modest because, looking at the global emission scenarios, the power sector often compensates for the residual emissions of transport. But also the power sector will probably could face difficulties in reaching their higher targets, and then transport would need to halve its emissions by 2050.

Would it be possible to reach this objective for surface transport of probably 50 % ? There seems to be great consensus on the approach. Creutzig et.al (2016) mentions three important elements ; aggressively increasing fuel efficiency, shifting from fossil fuels to electric drive vehicles and slowing demand growth, especially in urban settings. And on the same question the ITF states in its Transport Outlook 2017 ; "*that positive outcomes in the direction of the huge* (ITF speaks even of 80 %!) *CO2 emission reduction are only possible through a combination of three types of measures in favour of sustainable transport: avoid (unnecessary travel), improve (efficiency of vehicles) and shift (to low-*

carbon modes such as public transport)". Creutzig et. al (2016) warns that future efficiency gains are likely to become more costly without sacrificing vehicle size, safety, equipment or comfort.

All authors on reaching global warming objectives in surface transport conclude that strong policies on all three elements – efficiency, shift, and demand- are necessary, and as fast as possible. But, as I described in chapter 4 reluctance by policy makers can be seen, nicely characterized in Creutzig et.al (2016): "*so far, however, we see little global appetite among policy makers for seriously discussing thorny transport issues in public debates and international climate negotiations"* . Or looking at the ITF recommendations; improving is accepted, shifting is hoped for, and the message of avoiding is seldom picked up! And Gossling and Metzler (2017) mention that the measures taken by the German governments to reach targets in the fight against global warming are not significant enough, because complexities in car fleet renewal and in car use patterns and driving styles are overlooked. Moraglio and Diemel (2015) present the state of art mentioning that although there is the perspective of a sharing economy, and although car ownership seems to be losing appeal, most consumers do not want to give up easy access to individual vehicles. *A strong inertia can be noted*.

Canzler and Wittowsky (2016) bring in a broader perspective and conclude that there can be no energy transition without a mobility transition. Optimizing and making transport far more energy efficient is a sine qua non for realising the energy revolution. And Canzler and Knie (2015), looking at the German situation conclude that "*the Energiewende has until now been a Stromwende, but should also be a Verkehrswende".* Their spectrum of measures to reach such a Verkehrswende is seen quite often ; banning cars on fossil fuels from cities, abolition of tax privileges for company cars, smaller cars, more persons per car. Many of these measures are car related, as fossil fuel cars still have the greatest CO2 emissions per passenger (Ecorys, 2016).



Shifting from fossil fuel cars to electric cars would help in reaching CO2 emission objectives, but travelling with more persons per car is also an important solution. For example, travelling in a fossil fuel car with three persons creates less CO2 emissions than travelling alone in a full electric car!

6.3.2 Electric vehicles as a “deus ex machina”

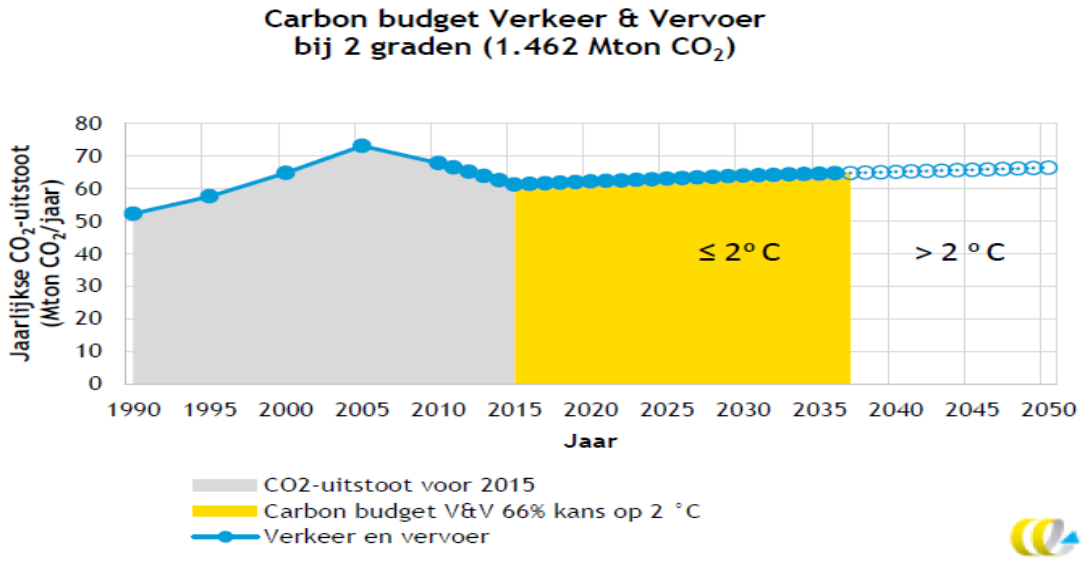
In recent years a new development can be noted. It looks that in policy circles in OECD countries the problem of reaching objectives of global warming gets narrowed to the question whether we could reach as fast as possible a shift to electric driving. Shifting from fossil fuel cars to electric vehicles seems now to be seen as the route to reaching sustainability. Even so; reaching electric transport can be seen as the *“deus ex machina”,* at least by technology fix- thinkers. Their reasoning is often that when countries succeed in making the shift to electric just before 2050 we will have clean vehicles, and broader clean mobility, just in time.

This idea needs more elaboration. At first, not only cars, but also the sources of electricity and the car production should then be clean. This creates an extra burden, and brings this solution back to the core of the energy debate. Secondly, we should not be overly optimistic about the penetration rate of electric vehicles in the car fleet in OECD countries. With great “management by speech” in all policy circles, with ministers declaring that by 2030 100% of all car sales should be electric penetration rates outside Norway (where electric cars almost always are purchased as second cars) is lower than 1% in the car fleet, and car fleets change slowly (mostly 18 years). Some intuitive counting could be done, as I did for the Netherlands.

Year x000	EU 2030 ; 15-20 % new purchase	Past Cabinet ; 2035 100%	Past Parliament 2025 100%	On average
2018	10	10	10	10
2019	14	20	40	25
2020	18	35	90	48
2021	23	50	150	71
2022	28	70	210	103
2023	34	90	270	133
2024	40	110	340	163
2025	46	130	400	195
2026	52	150	400	204
2027	58	170	400	209
2028	64	185	400	214
2029	67	200	400	223
2030	70	220	400	230
	592	1440	3510	1882
2030 (2035) Jaar 100 %	7 % (13 %) na 2050	17 % (36%) 2049	41 % (65%) 2043	22 % (39%) 2048

Nieuwaankopen ; jaarlijks 400.000 auto’s , gaan uit van 8.500.000 auto’s

With this counting in mind, it would be possible to have a full electric fleet before 2050, with the exception in the situation that the time frame set by the European Union will be followed (EU policy, published in November 2017). It is essential that very soon batteries and cars will become far cheaper, as is now hoped for. And officials in the EU commission had to admit that a considerable part of the decarbonization strategy on mobility and transport depends on new technologies that do not as yet exist (Gossling, Cohen and Hares, 2016). Thirdly, it is nice to have a full electric car fleet just before 2050, but there is a greater problem. In most scenarios we will in OECD countries reach this situation only after a rather long- next two decades- period (2020-2040) of still enormous fossil fuel CO2 emissions from cars. Fossil fuel cars will become more fuel efficient, but, as Canzler and Knie (2015) write, there is an end situation on innovation here, and will have the same time frames on sales, so we still have 20 years of extensive CO2 emissions. *This means that the so called CO2 budget for surface transport, the budget that OECD countries are allowed to use, before reaching the point after which the plus two degrees target has become unreachable, is exceeded long before we reach the point where the car fleet is near to completely electric and clean*. For the Netherlands the CE presented this in a picture (CE, 2016).



In the Netherlands we are now in a process where the mobility sector reaches its full usable CO2 budget at 2036. After 2036 the mobility sector is thus unable to remain within the plus two degree objectives, and is on the road to plus 3 degrees, or even plus 4 degrees. It is questionable whether other societal sectors will allow this to happen, as they then have to make the contribution that the transport sector failed to deliver! And lastly, with this focus on electric vehicles as a substitute for fossil fuel cars, there is not much of an inspiring transition perspective, as Moraglio and Diemel (2015) state ; *"electric motor vehicles are, at the end of the day, like old familiar cars, with a different engine, and whose final effect on air pollution and total energy consumption are not so clear".*

6.3.3 Pathways to sustainable mobility and relation to Inclusive Transport

The focus on electric driving as *the* solution for reaching sustainable mobility obscures the need to work on the last element of the triangle, avoiding, influencing and changing demand (Creutzig, 2015, Creutzig et.al, 2016, International Transport Forum,2016). This element is not popular in policy circles. Also here are two hopes, the first being that the sharing economy will become a success on its own, and the second that the younger generation will have other attitudes towards mobility. Many policy makers just leave it with these hopes, and hope for the best. This behaviour finds its rationale in the situation that reaching the climate change/ global warming targets in mobility is very difficult to reach without a holistic, integral approach to radical change in travel patterns (Brand, Morton, and Anable, 2017) focussing on mode choice, vehicle occupancy, smaller cars, no single car use anymore, and on road driving behaviour. Reaching the two degree scenario is very demanding, regarding required changes and transitions (Kobayashi, Fulton and Figueroa, 2017). And Lennert and Schonduwe (2017) note that recent results "*offer little confidence that the policy mix currently deployed towards mitigation will have sufficient decarbonising impact*".

Givoni (2013) presents a view on four pathways to clarify the magnitude on what should happen when fuel efficiency options are already used, and when the fact that electric driving will offer- under strong conditions- only a partial solution is finally accepted. The first two pathways will not reach the global warming objective of plus two degrees. The first pathway is just *Business as usual*, still the favourite pathway, as we came across in chapter 4. His second pathway is *Mobility , with lower emissions*. This is the pathway of smart mobility, or ecological modernization. Electric cars typify this pathway. The two more disruptive pathways, the ones we probably need to follow to reach the global warming target put on mobility and transport are *Growth with lower mobility*, and *Changing Lifestyle*. In Growth with

lower mobility the focus is on smaller distances everywhere, on densification of cities, on stopping with globalization, and moving to “glocalization”. And in Changing Lifestyles the focus is on decline in consumerism, on sharing, on basic capacity (and mobility) rights and on severe restrictions on car use.

Creutzig et.al (2016) did present these pathways in a more societal perspective. The authors present two paradigmatic normative positions in shaping policy decisions on transport and mobility (also Mattauch, Ridgway and Creutzig (2015)).

paradigmatic positions for shaping transport policies (Creutzig et.al, 2016)

Transport-related factor	Subjective well-being	Liberalism
Environmental awareness	Rewards for individual altruistic behavior	No particular rewards
Mode choice	Incentives for NMT, change in social norms, and cues against biases	Degree of incentivizing NMT depends on type of liberalism
Safety	Disincentives for risky behavior	No disincentives for risky behavior
Commuting	Disincentives	No disincentives
Car purchase	Vehicle tax according to car type	A status tax (according to type of liberalism)
Infrastructure	Prioritization: NMT, short commutes	Not directly applicable Alternative: elicit preferences in simplest context

The now prevailing Liberalism approach is not the best fit approach for realising the Growth with lower mobility and Changing Lifestyles – pathways. We could with Schonduwe and Lennert (2016) only conclude that as yet the leading policy circles and politicians are not on track to reach to objectives set on surface mobility in the policy related to global warming as they still hope for more sharing, less CO2 emitting attitudes of the younger generations, both lacking policy support, plus hope for moving to electric driving, also without strong policy support. In the next decade the pressure from other societal sectors on the transport sector to deliver will grow, as 2050 comes nearer. This means that discussions on “glocalization”, on banning fossil fuels cars from cities, on densification of built up areas, on using smaller distances, and on occupation rates of cars will almost certainly arrive on the political and societal agenda.

And here the combination with reaching Inclusive Transport comes into view. In the next decade both the demand/avoidance element in the triangle to reach sustainable mobility and inclusive transport will have to find a start in policy. And many potentially overlapping themes can be noted such as diminishing car dependence, densification of built up areas, and occupation rates of cars. Reaching objectives on global warming in transport and mobility can be supportive in reaching inclusive transport, and vice versa.

6.4 Insights on global warming, car dependence, accessibility and land use ; the input from 12 researchers from 4 countries

In 6.5 I will present my rather radical approach on reaching inclusive transport in a world that needs to make the transition to sustainable mobility. In this paragraph I will present on overview of the visions and research results of twelve researchers that I admire for their originality, their broadness in vision, and for their pro- active thinking. In have made “triumvirates” for each of the four countries that I consider to be leading in the debates on involuntary transport disadvantages. And I have not looked

at the full specialists on involuntary transport disadvantage such as Karen Lucas, Graham Currie, Joachim Scheiner or Antonio Paez, just because I would like to focus here on insights in the relationships of the four themes mentioned in the title.

Before starting with these insights, a note on the frame. We need in our world to create mobility that is sustainable in every respect. And we are still far away from this situation, we are often even moving in the direction of growing unsustainability of mobility, just through the enormous growth that will take place worldwide. Mobility stands firmly at the basis of our life - arrangements, whether that are relations of trade, freight and consumption, or relations of work, housing and leisure. Mobility is embedded in western lifestyles and gets embedded in lifestyles all over the world. When we accept that in non- OECD countries the share of mobility within CO2 budget may grow, than in the OECD countries we face an extra challenge. We will elaborate on this challenge, but the direction is clear. *We need to clean, to rethink, and to reorganise mobility;*

- Cleaning mobility; diminishing the burden of fossil fuel based mobility. As we know the mobility budget on CO2 is spent long before we reach a situation of carbon neutrality in mobility.
- Rethinking the societal arrangements that produce so much mobility, time and time again. This is about minimising car dependency, air travel, and bunker-oil shipping and even more about creating other societal arrangements on trade, freight and consumption and on work, housing and leisure
- Reorganising the use capacities of mobility; cars, trucks, roads. Mobility is in majority now a lonely activity, using only a small part of the full potential of vehicles. This is about sharing capacity, about joint travel experiences, about creating mobility services and even broader about social inclusion and social cohesion.

It is on these elements that I will focus my presentation of the work of the twelve authors.

6.4.1 United Kingdom; David Banister, John Urry and Greg Marsden

6.4.1.1 David Banister

David Banister is now at least 12 years active in communicating other paradigms for transport and mobility. In 2007 in his In *Paradigm Shift too difficult in UK Transport?* he clarifies two paradigms for mobility and transport. First the dominant one, focussing on economic growth, with greater prosperity related to higher levels of mobility, working with the (neo-) classical rational model of trip generation. And secondly, the alternative paradigm where "ceilings" are placed over the growth trends, with reducing the levels of car use, and increases in the green and slower modes of transport, plus wider notions of street and land use creating neighbourhood quality. He also introduces the need for carbon reductions in transport, and argues that policies are written , but that very little seems to be happening in practice. He considers the role of transport in CO2 reduction an '*uneasy one, in terms of whether it should take its "fair" share or just any share in the reduction".* For Banister in all his work it is clear *that "the value system of individuals and firms needs to change so that the car is not seen as the current dream that is promoted in advertisements" while "the collective benefits of clean cities must be given higher priority than the individual mobility provided by the car".* He is not overly optimistic about this change as "*realistically, it is hard to conceptualize such a change in advance of the disaster actually occurring (meant is; global warming HJ) partly as current lifestyles are so transport dependent. There is enormous capital tied up in cities, in local and national economies, in the motor industry and in private cars*". And he ends this 2007 article with his returning plea; *"a paradigm shift towards sustainable development is necessary and not difficult to achieve, at least in cities, provided that there is both strong political and public support"*

In 2008 Banister publishes his famous *The sustainable mobility paradigm.* He introduces the two paradigms, this time in a table, with the basic notion that the regime in mobility is still that transport is a derived demand, travel is a cost and travel time should be as short as possible to minimise costs.

1. Contrasting approaches to transport planning (Banister,2008)

Contrasting approaches to transport planning

The conventional approach—transport planning and engineering	An alternative approach—sustainable mobility
Physical dimensions	Social dimensions
Mobility	Accessibility
Traffic focus, particularly on the car	People focus, either in (or on) a vehicle or on foot
Large in scale	Local in scale
Street as a road	Street as a space
Motorised transport	All modes of transport often in a hierarchy with pedestrian and cyclist at the top and car users at the bottom
Forecasting traffic	Visioning on cities
Modelling approaches	Scenario development and modelling
Economic evaluation	Multicriteria analysis to take account of environmental and social concerns
Travel as a derived demand	Travel as a valued activity as well as a derived demand
Demand based	Management based
Speeding up traffic	Slowing movement down
Travel time minimisation	Reasonable travel times and travel time reliability
Segregation of people and traffic	Integration of people and traffic

Banister notes that the public acceptability of the alternative paradigm is still low, whereas public acceptability drives political acceptability. He feels that public acceptability could be high, provided that social norms can be changed and policy measures are presented as a package that can effectively be implemented. And again, his plea is for political energy; "*there must be willingness to change"*

In 2011, in *Cities, mobility and climate change* he urges for stronger measures as *"the belief that high mobility and technology provide the solution is misplaced, as technological innovation can only get us part of the way to sustainable transport"*. The seriousness of the climate change is not picked up by politicians, through" *a lack of clear vision and the seductiveness of following the high mobility option*". In this article his disappointment can be noted; "*the high mobility option is extremely inequitable, it is the classic situation where individual welfare is a much stronger force than societal welfare"….and "a serious debate (on the future of mobility) has not even started, and the climate change clock is ticking!"*

In his later work he considers the neo -liberal ideology (*The trilogy of distance, speed and time*, 2013) and risk aversion by politicians and policy makers (*Transport Futures; Thinking the Unthinkable, 2013,* Banister and Hickmann) as two major barriers in trying to reach a sustainable mobility. He even sees in the UK retrograde steps, as the national government is breaking down spatial planning frameworks (as did happen in many OECD countries in the second decade of this century, see also 6.2.4) ; *"reducing transport CO2 emissions is very unlikely under the current weak planning regime"* (*Planning for more sustainability, 2013* Hickmann, Hall and Banister). In 2016 he concludes that equity between societal sectors in fighting global warming should be normal: '*it is commonly stated that carbon reductions in transport are difficult and expensive, suggesting that other sectors should curtail emissions. This is not acceptable, especially if reductions elsewhere are offset by increased mobility".*

And his programme for change gets more radical (*Thinking change and changing thinking*, 2016, Banister et.al) as it contains challenging private car ownership, restrictions to be placed on the car industry, and fighting the ambivalence of promoting low carbon mobility, while insisting in investments in transport infrastructure to promote economic growth.

6.4.1.2 John Urry

Whereas with David Banister we see a nuanced researcher becoming more radical, with the in 2016 deceased John Urry we connect to another energy. Urry brings more drama in his views and insights, and even uses hyperbole language. This is already the case in his famous 2004 article, *The System of Automobility*. Urry presents in this very well written article a sometimes hilarious but correct view on what the car, and broader the "structure of auto space" is doing to human beings; "*Automobility can be conceptualized as a self-organizing autopoietic, nonlinear system that spreads world-wide, and includes cars, car-drivers, roads, petroleum supplies and many novel objects, technologies and signs*". And *"Automobility has irreversibly set in train new socialities, of commuting, family life, community, leisure, the pleasures of movement and so on."*

However, this all comes at a cost, at a societal level ; *The urban environment has 'unbundled' territorialities of home, work, business and leisure that historically were closely integrated, and fragmented social practices in shared public spaces. Automobility divides workplaces from homes, producing lengthy commutes into and across the city. It splits homes and business districts, undermining local retail outlets to which one might have walked or cycled, eroding town-centres, non-car pathways and public spaces*. And at an individual level ; "*automobility is thus a system that coerces people into an intense flexibility. It forces people to juggle fragments of time so as to deal with the temporal and spatial constraints that it itself generates.*

The Frankenstein Monster (https://nl.pinterest.com/pin/105271710014644506/)

*Automobility is a **Frankenstein-created monster,** extending the individual into realms of freedom and flexibility whereby inhabiting the car can be positively viewed and energetically campaigned and fought for, but also constraining car 'users' to live their lives in spatially stretched and time-compressed ways. The car is the literal 'iron cage' of modernity, motorized, moving and domestic."*

Most car users seem to take this all for granted, but it is clear that Urry challenges this view. He notes a great many disadvantages such as too great dependence of fossil fuel production, lost qualities of landscapes, reformed by car needs, and stress at an individual level. And in 2004 he already predicts a

change in the system of automobility from outside; "*It will probably arrive from a set of technologies or firms or governments that are currently not a centre of the car industry and culture."*

The future of the system of automobility remains a focus point in the work of Urry. Together with Dennis he publishes in 2007 *The Digital Nexus of post- automobility*. They consider that the "*days of the automobile to unfettered freedoms and a spontaneous release and "get away" are surely numbered"*. Post- automobility will be an increased systematization of car mobility, and digitalisation of the car mobility could be a way out, but is also "*a Faustian bargain, a dance with the digital in taming the utterly dominant car system*" (as taming seems necessary looking at the fight against global warming).

Urry presents in 2008 in *Governance, flows and the end of the car system* more details and sees for the car system – *"a Janus face creature extending individuals into realms of freedom and flexibility, but also constraining them to live spatial stretched and time- compressed lives*"- two different futures, the control via IT (Orwellian), or barbarism of unregulated climate change (Hobbesian). In *After the Car,* 2009, Urry and Dennis arrive at four possible futures, the two just mentioned, plus a hypermobility scenario, very technological, and not taking climate change serious, and a local sustainability scenario, with mobilities moving the more local and smaller scales. The authors consider these latter scenarios less realistic than the former, more dystopian scenarios. And in two later articles (*Sociology and Climate Change, 2010, and Climate change and Society, 2012)* he sees gradualism, scepticism and catastrophism as three possible ´answers" to global warming. It is clear that Urry was not very optimistic on the route that will be taken as he, just as Banister, sees neo- liberalism as the dominant global orthodoxy, not acting pro-active towards sustainability challenges.

6.4.1.3 Greg Marsden

With Greg Marsden, the youngest of this first triumvirate we move back to the energy of Banister. Also Marsden remains within the scholarly boundaries, but has hard truths to tell. We encountered Marsden already in 4.7 when I discussed the "Following Wisely"- approach. He pointed , with several co- authors, to the ambivalence of government policies on global warming related to mobility, with their strong texts, but weak programs and their lack of accountability frames and clear targets. In essence these policies can be seen as cosmetically and full of declaratory commitments without real follow- up.

Marsden tries to reflect in his work on what actually happens in practice. In *Transport, economic competitiveness and competition* (2015, Mullen and Marsden) he tries to get grip on the thinking of many city managers, who still believe in strong links between transport infrastructure investments, economic growth and job creation, whereas the academic literature tends to conclude to weaker links. A gap between the thinking by these officials and the types of available transport investment decision support tools can be noticed, with great consequences for the direction of transport policies. And in *Mobility justice in low carbon energy transitions* (2016) the same authors state that hope on replacing fossil fuels cars by electric cars is in the core in the policy approach for tackling transport pollution. Such a bias on technological fix is "*not going to change the dominant policy approach , as this approach helps to sustain our existing conditions involving reliance on cars".* This approach, and here involuntary transport disadvantage moves in, "*privileges those with access to private vehicles and further privileges certain sets of activities".* Stated the other way around, in a mobility system that is far less reliant on cars, it may be necessary to change the spatial patterns of service delivery.

But all this arguing seems too dynamic for what Marsden sees happening in practice. What does an uncertain future on mobility mean for the practice of transport infrastructure planning? Looking at

Institutional issues in planning for more uncertain futures (Marsden and McDonald, 2017) the authors have to conclude that uncertainty is not an important category for most transport planners. They cite on this point Antonson and Akerskog (2015) who found "*slow implementation of new notions, methods and scientific knowledge, when practice is building mostly on experienced knowledge"* . Marden and Mullen (2015) on this point; "*the narrative that good transport stimulates jobs, and therefore more mobility is hard to challenge…despite the acceptance that "predict and provide" does not work the assumed relationships between transport and the economy are not dissimilar for those which were in place as automobility took off".* Here again, we can see a complete stagnation in dominant thinking in the regime of transport, often supported by mediocre neo- classical research frameworks, I would conclude. Marsden is more polite in his phrasing, but his nuanced language hits probably even harder.

6.4.2 Germany ; Weert Canzler, Stephan Rammler and Martin Lanzendorf

6.4.2.1 Weert Canzler

Canzler published most of his work in German, and is not very well known outside his home country. But in Germany he is one of the key players and "thought leaders" on mobility. Already in 1996 and 1997 he published two interesting articles (Festgefahren, 1996, with Marz, and Der Erfolg des Automobils und das Zauberlehrlings – Syndrom, 1997), presenting keys to his thinking. He sees that "*die drei Hauptakteure – die Unternehmen als Anbieter, der Staat als Rahmensetzer, und die Nutzer als Nachfrager- sind im diskursiven Rahmen ein arrangement angegangen*" ("The three main actors - the companies as providers, the state as the framework composer, and the users as the demanders - have come to an arrangement in the discursive framework"), created a sort of Automobilpaktes (comparable with the CDO, Car Dependence Organisation, 4.5),, and that this Pakt has a peculiar characteristic; "*die Stagnation des Automobilpaktes ist innovative, insofern alle verfugbare Wissen mobilisiert wird um die vorhandenen aber eng bemessenen Spielraume zum aussersten auszureichen*" ("the stagnation of the Automobile Pact is innovative, insofar as all available knowledge is mobilized in order to use the existing, but narrowly dimensioned, space to the outermost"). Canzler calls this innovation within ever the same frames "*stagnovation"*.

Canzler often uses activist frames and activist language, and searches continuous for new developments. In *Wege aus der Verfahrenen Verkehrspolitik* (2004) he states : "*Die Ratlosigkeit in der Verkehrspolitik ist an alle Ecken zu spuren*" ("the helplessness of transport policy can be noted everywhere") , meaning that it is difficult to think and act about mobility in other frames than car-frames. Related to this observation in *Umdeutung des Automobils* (2004, with Knie) he writes : "*wie sehr modern Lebensweisen bereits of das Automobil eingerichtet sind; die Freiraume warden im Laufe des Lebens kleiner, ein stressiger Beruf, und eine eigene Familie, eine Datsche, oder die kranken Eltern lassen keine praktikablen Spielraume mehre- met dem Verlust der Leichtigkeit verliert sich auch das Experimentelle* ('how much modern lifestyles are already set up for the automobile; free space become smaller in the course of life, a stressful job, and a family of one's own, a second home, or the sick parents lead the diminishing possibilities. The loss of lightness also leads to the loss of the experimental (such as car sharing, or living without a car, HJ)) ". He sees the dominance of car use as a form of path dependence.

From 2008 Canzler is involved in creating experiments in real life. He created as a researcher with another important German mobility researcher, Andreas Knie, his own experimental company, on car sharing just to see what happens, and publishes about this experiment in *Grune Wege aus der Autokrise* (2009). He sees possibilities, but governments should help the transition towards electric mobility and car sharing (*Klimaneutrale Autos , eingebettet in intermodale Verkehrskonzepte*) , with a

form of masterplan. In recent years he reframes the change in mobility in relation with the German *Energiewende*; "*an energy transition cannot happen without a simultaneous transport transition; society is open to decarbonising transport in Europe"* (Canzler, Knie, 2016a, see also Canzler,Knie 2016b). But this all asks for political leadership, for ambitious and transparent CO2 emission limits, for consistent management of public transport and parking space, for support for smart grids in citizens hands, and for organizing stakeholder networks (Canzler, Knie, 2016a). In his eyes we just should move forward as mobility and transport are the "*Klimasorgenkind*" ("the problem child of the climate policy"). In Canzlers words; " *Schemenhaft zeichnet sich eine posfossile Mobilitat ab. Aber die rechtlichen Rahmenbedinggungen fehlen; es is Politik met angezogener Handbremse!* " ("Somewhere in the twilight a post- fossil fuel mobility can be seen, but legal frameworks are missing, as politicians act with the handbrakes on!", Canzler, 2017).

6.4.2.2 Stephan Rammler

Rammler, the director of the Institute of Transportation Design in Braunschweig, is the visionary in the German triumvirate. Central to his idea of modernity (Rammler, 2004) is movement. Modernity has core institutions – capitalism, democracy, and scientific-technical rationality- all leading to differentiation. Cars facilitate the ever increasing spatial differentiation and temporal flexibilities, and mobility, and in essence car mobility has become essential for modern societies to function. For Rammler "*mobility policy is social policy'* (Rammler, 2014). However ; fossil fuels are a threat to mankind. Looking at the challenge to create post- fossil or sustainable mobility "*our political concepts are undertaking maintenance on the Titanic, than efforts to change the course to avoid the iceberg*" (Rammler, 2014), which is an interesting imagery discussing mobility and global warming!

1. Volk ohne Wagen, book of Stephan Rammler (https://www.fischerverlage.de/buch/volk_ohne_wagen/9783104904283)

The work of Rammler is dominated by the question*; 'how one can counter the story surrounding modern mobility – which promises freedom and independence- with a new and hopeful narrative that can be made the basis of an appealing and coherent vision on sustainable mobility* ?". Rammler (2014) is clear on the direction; "*the only way to reach permanently sustainable mobility is through the* ***de- individualisation*** *of private mobility on the basis of a complete renewable energy base, a dramatic increase in the use of public transport, and a reorganization in our settlement and economic structure."* The solution that Rammler foresees is a complete shift to electric cars, the sharing of car space, decreasing parking space, banning new road infrastructure investments, and shifting these investments to public transport and to interactive taxi services in rural areas, plus the creation of "Mobility as a Service"- solutions. Rammler states for example in his *Volk ohne Wagen* (2017) ; "*Das Automobil wie wir sie jetzt kennen ist ein dummes Product"* ("the car as we know it now is a stupid product") and " *Die automobile Massenkultur gehort abgeschaft*" ('the automotive mass culture needs to be abolished") . Rammler sees certainly a position for shared cars in mobility services, is not against cars, is an optimist and sees three possible scenarios to reach the new sustainable mobility; Business as usual (but then it will take long time), Transformation or Trend break (Rammler, 2013). Rammler is influential, but his advice *"Wunschenswert ist dass Stadte keine Fahrzeuge mehr mit Verbrennungsmotoren in ihrem Innenstadt-*

bereich zulassen" ("It is desirable that cities no longer allow vehicles with internal combustion engines in their inner-city", Rammler, 2016) has as yet not been picked up !

6.4.2.3 Martin Lanzendorf

In the German triumvirate Lanzendorf is the most academic oriented researcher. In 2003 he introduced a new idea, the Mobility Biography, studying the mobility socialisation, or better ; the study of socialisation effects, related to mobility choices, over the life course. Lanzendorf introduced here three domains ; a lifestyle domain, an accessibility domain, and a mobility domain. Important in mobility biographies is the role of key life events, as mobility practices often change with these events, such as building a family, getting children or accepting a new job.

In 2010 Lanzendorf presented a paper (together with Kennworthy (see 6.4.4.1) and Klinger) called *Mobility Cultures in urban areas; a comparative analysis of 44 German cities*. This paper, already introduced in 4.3, identifies the importance of urban mobility cultures in realising higher or lower car dependence. Car dependence in its perceived form is created by individuals, but the supply of alternatives offered seems to be created by the broader mobility culture in a city or an area.

Lanzendorf also studied the behaviour of politicians who in general seem unable to pick up the insights from mobility research. As he (together with Busch- Geertsema and Klinger, 2015) concludes the situation is worse at the national level, than at the local level. At the national level *"Insbesondere populare, greifbare und sichtbare Massnahmen wie der Bau neuer Infrastruktur oder die Entwicklung von Verkehrstechnolgie gelten als Erfolg, wohingegen tatsachlichen und dauerhafe Veranderungen nur selten von der Politik selbst angestossen werden"* (' Especially popular, tangible and visible measures such as the construction of new infrastructure or the development of traffic technology are considered successful, whereas actual and lasting changes are rarely triggered by politicians*")*. The authors state, in line with 4.3 that "*gerade auf kommunaler Ebene innovative und kreative Ideen entwickelt warden, wobei die Stadte und Gemeinde fur deren Realisierung meist auf die "Goldene Zugel"der Landes und Bundespolitik angewesen sind*" ('innovative and creative ideas are being developed especially at the municipal level, whereby the towns and municipalities are mostly responsible for the realization of the "golden chords" of state and federal politics"). And here, these ideas fail as national federal politicians are not supportive in their behaviour!

All three German researchers were involved in a recent initiative to bring social science oriented insights into mobility policy in Germany (*Lage und Perspective der Verkehrs- und Mobilitatsforschung*, 2016) as Lanzendorf writes; "*das Forschungsprogramm im Bereich Mobilitat ist derzeit dominiert von wirtschaft- und ingenieurwissenschaftlichen Fragestellungen und Methoden. Entsprechend dominiert ein positivistisches Forschungsparadigma"* ('The mobility research program is currently dominated by economic and engineering issues and methods. Accordingly, a positivist research paradigm dominates"). And the group questions the consultants view on mobility questions as "*was dem kurzfristig angelegten Beraterblick haufig fehlt, ist eine Auseinandersetzung mit den gesellschaftlichen Folgen, und vor allem mit der gesellschaftlichen Gestaltbarkeit der anstehenden technologischen und infrastrkturellen Umwalzungen*"(" What is often lacking in the short-term adviser 's view is an examination of the social consequences, and above all, of the societal feasibility of the upcoming technological and infrastructural changes") !

6.4.3 France : Jean Pierre Orfeuil, Sylvie Fol, Benjamin Motte Baumvol

6.4.3.1 Jean Pierre Orfeuil

Orfeuil is a nestor of the French transport research, a policy oriented researcher with an open eye towards inequalities in accessibility for different societal groups. Orfeuil can be seen as the successor of Gabriel Dupuy, the man that started the debate on car dependence and car culture in France with his rather famous book *La Dependance Automobile* (1999). In *Accessibilté, mobilité, inegalities* (2004 b) Orfeuil sets the tone presenting a picture of the 20 % non- car households in France, spending more on transport in their households budgets, but travelling less, and having greater difficulties in reaching locations in an ever more car – based society. In another publication he remarked *"basically, the location of residences and amenities is more and more directed by the upper and middle class behaviour, for whom car use is not a problem"(*Orfueil , 2004 b) and he illustrates this by noting that over 50 % of the commercial centres in Ile de France, the region around Paris, has no public transport service. Inequality in mobility is also a geographical phenomenon as; "*pour un deplacement d' une heure, la marché d émploi par les residents de la deuxieme couronne est deux ou trois fois plus reduit que celui des banlieusards at des Parisiens, et il est toujours plus faible pour les ouvriers et les employés que pour les cadres"* (Orfeuil and Massot, 2005, *Penser les mobilités de demain*) ('Looking at a trip of an hour, the labour market in the area some 50 kilometres from Paris centre is two to three times as small as the one from the suburban or central Paris' households, and this situation is more severe from labourers and lower employees than for the higher functions").

In 2010 Orfeuil writes his *La mobilité, nouvelle question sociale?* which I consider one of the most important articles on involuntary transport disadvantages to date (an article, however, seldom cited in the Anglo-Saxon world, who tends to forget that other languages exist!, HJ). He looks back to the crisis of the banlieus (see 2.3.3), and explains why poorer households get into problems as "*les pouvoirs public signent une longue serre de decisions dont la présupposé impliciete est que la mobilité et l'usage personnel d 'une automobile sont a la porteé de tous"* (" the public authorities sign a long series of decisions whose implicit assumption is that the mobility and the personal use of an automobile are at the door of all "). Orfeuil sees the problems as related to households and less to specific regions or neighbourhoods, although he admits that there are geographical differences, with greater problems in the peri- urban areas and rural areas and parts of the banlieus where no appropriate public transport exists,. He sets out a programme for action, focussing on acquisition of mobility skills, on getting driving licences, on subsidising travel costs for modest households, on mobility assistance programs, on audits on the social aspects of location choices, and on integrating urban policy, housing policies and mobility policies.

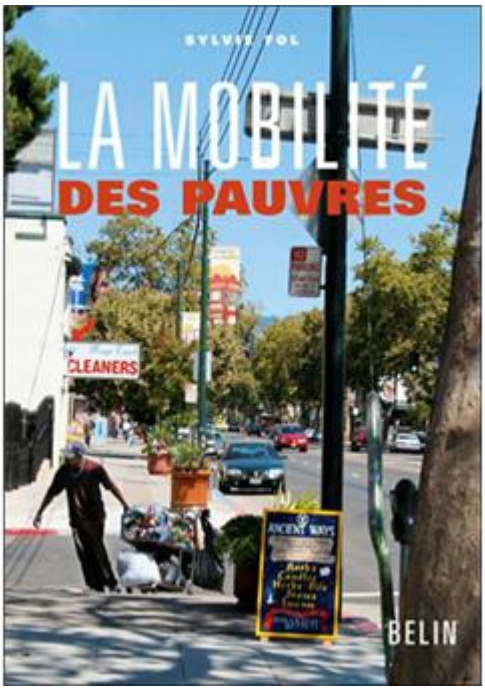
In later years his inclination towards non- car households gets accompanied by worries about petrol prices and global warming (Orfeuil 2014, 2016). He constructs that in France rural areas households have a heavy burden on prices for petrol in their household budgets. He sees the choice for car use as "*absurd, mais il est aussi rationnel, dans le context actuel*" ("absurd, but also rational, looking at the actual context"). And he makes a plea for smaller cars as "*la voiture est en general surdimensionee pour beaucoup d'usages quotidiens*" ('the car is usually oversized for many everyday uses"). He seems to get more radical in later years, as he concludes La Mobilité. Vers de nouveaux modeles (2016): " *Une mobilité fonde quasi exclusivement sur l'automobile est couteux et risqué les raretes petroliers ront annoncess et que le changement climatique est une menace de plus en plus averee"* ("Mobility based almost exclusively on the automobile is costly and risky as oil shortages will be announced and climate change is a threat increasingly recognized").

6.4.3.2 Sylvie Fol

Sylvie Fol can be considered the "grande dame" of the French mobility research and is as such the successor of Helene Massot. Two of her core themes are shrinking cities (Fol and Cunningham- Sabot, 2010) and social inclusion and exclusion via mobility. We already met her first theme when I presented

the situation in Mecklenburg Vorpommern (2.3) , where not only villages but also cities are faced with population declines up to 20 % in a decade. A process of “global shrinkage” should lead to revalorisation, but not all cities and urban regions have the possibility to renew.

La Mobilité des Pauvres, book of Sylvie Fol (https://livre.fnac.com/a2712949/Sylvie-Fol-La-mobilite-des-pauvres)



Her second theme gets a focus in a book published in 2009*, La mobilité des pauvres*. In this book she presents results from many researchers and she presents the split originating in her article from 2002 , written with Coutard and Dupuy, *La pauvreté peri- urbaine: dependence locale ou dependence automobile,* introduced in 2.3.3.

In *Segregation et justice spatiale; perspectives* (Fol, Lehman- Frisch, Morange, 2013) she notes that a special segregation is taking place in cities as; *“assujetties au dogme neoliberal, villes excluent de plus en plus violemment de leurs centres les populations socialement faible”* (“subject to the neoliberal dogma, cities exclude more and more violently socially weak populations from their centres "). And “*…partout l’ideologie neoliberale tend a eriger la mobilité, quotidienne (pour l’acces a lémploi) ou residentielle (dans le cas des politiques de desegregation) en norme qui s’impose aux habitants des quartiers pauvres comme l’ensemble de la societe urbaine*” (“everywhere the neoliberal ideology tends to push mobility, daily (for the access to the employment) or residential (in the case of the policies of desegregation) as a norm that gets imposed on the inhabitants of the poorer neighbourhoods just like in the whole of urban society”).

In *Faire face aux egalites de mobilité* (Jouffe, 2015, written with Fol, Caubel and Motte Baumvol) the focus is on strategies how the poorer households and individuals cope with their lower mobility levels. They tend to work more in the local labour markets, use “*covoiturage*” – getting lifts from acquaintances, use their bonding capital, especially with their families. They organise all the trips that have to be made by car on one special weekday and ask then support from car diving friends or family, and they search for their free time activities in a smaller geographical space. Sometimes they move, as especially single parent families without cars move from peri urban areas.

6.4.3.3 Benjamin Motte Baumvol

Motte Baumvol is the youngest in the French triumvirate. He is building on a broad oeuvre, with a focus on peri urban areas, mobility in Brazil, internet shopping with its consequences for mobility and escorting as an upcoming mobility practice. Since his thesis he can be considered the chronicler of the households moving to or living in the peri- urban areas and their socio- spatial and mobility arrangements. In his *Les populations peri-urbaines face a l 'automobile en grande couronne francilienne* (2007) he concludes that car dependency is greater in villages where there are no services. But even when there are services car use is on a higher than average level than in France as a whole. Peri- urbanisation is a threat and a preference. People like to live there, but they feel vulnerable as well. The distance to workplaces, and sometimes also to leisure is very great, they have to face congestion near Paris, or on a broader scale, near cities, and they fear higher petrol and oil prices in the future.

In *Vivre le peri urbain* (2010) he differentiates the peri- urban realm in different spaces. And he tries to define the core of the peri- urban experience in ; "*l'habiter periurbain est avant tout une adaptation d'l'habiter urbain déformé par la porteé plus longue des déplacements*" ("periurban living is above all an adaptation of the deformed urban inhabitant by the longer distance traveled "). In *Leaving Car Dependent Areas* (2013) he notes that many low income households who started to live in peri urban areas because of lower housing prices see themselves confronted with high and rising unanticipated transport costs. Most households stay, try to travel more together with colleagues, and especially the unemployed and single parent households move, but often to somewhere in the area.

In recent years Motte Baumvol shifts more to the study of immobility. In *The spatial dimensions of immobility in France* (2017, together with Bonin) a broad picture of immobility is presented. On average, immobility is higher in the less dense populated areas; for example figures presented by Armoguum et. al (2010) presented immobility rates of 8 % in Paris, tot 15 % in peri urban centres and 20 % in rural areas. And there is a huge difference in working people and students on the one hand, and non- working people and retirees on the other. Spatial inequalities have a greater impact of the latter group. The authors conclude that immobility is, a least partly, a manifestation of social inequality, but there are also elements of normal scheduling activities in the course of a week involved.

All in all, French – and to a lesser extent also German- researchers- have another style or writing and researching than most British authors. Real life experiences, choices and strategies of real households and individuals are never far away in their publications, and the same holds for power relations and inequalities. Perhaps it fits in the strong geographical tradition of many French authors, with its focus on "*espace vecu*" (the life world) or "*genre de vies"* (lifestyles"), but also emotions are never far away. Compare this with most of British academic writing (not that of the British triumvirate, and also not that of Karen Lucas or Doreen Massey!), which is more scholarly academic, distant, and sometimes even rather pale looking, as if the author does not feel connected with the subject, but more to his or her need to publish at least something, in order to maintain his or her academic career. I like this French tradition, where you immediately can meet people from the banlieu or from peri urban areas through their writing. French and German writers also do not have the reluctance that many British and Dutch authors seem to have, in trying to advice to policy circles, and thus in keeping the connections nice. It looks as if German and French writers just accept that there are as yet no elaborate and real forward looking policies on involuntary transport disadvantage or sustainable mobility and global warming, whereas authors on both sides of the North Sea still hope to get into dialogue with policy makers. I wonder why many British authors and many of my compatriots fail to see that forward looking policies are just lacking (and for clear reasons, see chapter 4), or are in essence rhetorical, as Greg Marsden showed eloquently. For me it is clear that these two domains - fighting involuntary

transport disadvantage and creating policies to stay within the two degrees global warming - will be complete battlefields in the years to come, and not themes for friendly policy advice!

6.4.4 Australia ; Jeff Kenworthy, Corinne Mulley, Jago Dodson

6.4.4.1 Jeff Kenworthy

Australian writers are somewhere in- between the British authors and the French writers. But Kenworthy stands in an activist tradition. He can be seen as one of the founders of the study of car dependence. In 1999 he published together with other authors the now famous source book on quantitative data of car dependence in world cities (Kenworthy et. al, 1999) and an article together with Laube (Kenworthy and Laube, 1999), explaining the patterns.

US cities exhibited the most extreme dependence on the car, followed by Australian, and – at some distance- Canadian cities. European and Asian cities had far more transit and greater shares of cycling and walking in their model split. Most car dependent cities seemed less wealthy than many more public transport oriented cities. Urban policy is important as also in Europe cities differ in their rate of car dependence. Kenworthy makes a plea for density, for good planning of urban land use and for investments in public transport.

The data are old, but the theme of car dependence, density and good city planning remains prominent in the work of Kenworthy. In later years he broadens this theme to ecology (in The eco-city, 2006) and global warming (Kenworthy, 2008). For the eco- city he advises a framework of a compact and high density urban form, with car free centres, and superior public transport systems, plus well maintained green city spaces. He understands what this means, in relation to "business as usual": "*for sustainable development, to be implemented, quite radical departures from normal planning and decision making processes in cities will be required"*. And for global warming Kenworthy advises to limit growth in car and motorcycle ownership and usage, especially in developing countries and to protect and enhance the roles of public transport, walking and cycling (Kenworthy, 2008). He is quite concerned about car dependence increasing in upcoming world cities but shows (Kenworthy, 2017) that in the cities he studied – Sao Paulo, Taipei, Prague, Mumbai, Shanghai, Beijing, Guangzhou "*none appear near to even capable of becoming automobile cities*", whereas *"the glamour of the automobile in dense, space- and road- constrained cities has lost much of its shine, and numerous cities are shifting to polycentric forms served better by transit and non- motorised modes".* In Deteriorating or Improving (Kenworthy, 2013) he presents a mixed view, with most cities declining in private passenger transport energy use, but with Australian and at smaller rate, European cities still increasing. And he offers an interesting and important caveat: "*the current strong push for " electro- mobility" in Europe, especially in Germany, is implicitly cast by engineers and technologists as a problem of replacing each kilometre driven by the current fleet of internal combustion engine vehicles with the same number of kilometres driven by electric vehicle*s"" but; "*in practice, electric cars only make sense in a scenario of significantly scaled down demand for private motorized mobility*".

6.4.4.2 Corinne Mulley

Mulley is a researcher, with a keen eye for forgotten aspects. She is probably the most analytical of the twelve researchers, but always practical in her research. Her specialism is public transport. In 2010 she picked up one of these forgotten aspects, excess travelling, the other side of the spectrum of immobility (Barr, Fraszczyk and Mulley,2010). Excess travel is about individuals traveling more than they need. There is voluntary excess travelling, with acceptance that a trip will take longer than necessary, and involuntary excess travel, where the traveller has the desire to reduce, which often

means a relocation, of house or job location. Excess travel be about costs, about time, or about both. Individuals need to look at accessibility in choosing their travel to work- situations.

Mulley published many articles on aspects of public transport. She published for example about the neglected role of topography in public transport planning (Daniels and Mulley, 2012), as public transport networks can seriously get constrained by topography. On network planning her plea is towards creating public transport services that reach the greatest coverage of passengers (Mulley and Daniels, 2012). That could mean the provision of flexible transport services, creating access for more households, while still offering the ability to ensure already existing passengers not to lose their accessibility. However, some people will lose their direct connection, and will have to go for an interchange, that they consider as a penalty. Mulley is practical on the chance of success; "*governments are not keen to introduce changes when there are "losers", even if these are small in number and are far outweighed by "winners". Losers tend to be vocal and it is always more difficult to take away a service which residents know exists*". Important for the access to public transport are also the contracts (Mulley and Ho, 2013). With 15 metropolitan bus contract regions there are significant differences between the regions, leading to worse or better provision of public transport. Here we see that a rather bureaucratic mechanism could lead to more or less involuntary transport disadvantage.

Public transport and dogs (https://www.indybay.org/newsitems/2013/04/22/18735643.php)

Another forgotten theme of Mulley is mobility with dogs (Kent and Mulley, 2017). Walking your dog is positive on health issues, but in Australia and in the U.S. in many cities dogs are prohibited in public transport. This leads to great difficulties for households and individuals without a car but with a dog . Here we have an interesting element of non- inclusive transport: "*the degree to which public transport is normalized and adapted to the vast array of journeys required to live a fulfilled and productive life in modern life in cities".* Here is in essence, we could speak of cultural, or lifestyle values "*as allowing dogs on public transport blurs the boundaries between the public and the private by bringing a very personal "object "of domesticity into the public realm*". Mulley certainly does not like a too narrow conceptualisation of uses for public transport. Note that countries with stronger neo- liberal cultures have more problems with accepting a broader spectrum of passengers.

Two newer themes in public transport have received her attention. Enhanced bus services, aiming to attract potential car users by offering high end spectrum services, such as high level of service busses or Bus Rapid Transit, do face reluctance in Australia, as public transport providers tend to be rather conservative in their approach (Clifton and Mulley, 2016). And in *Mobility as a Service (MaaS)- does it*

have critical mass? Mulley (2017) sees perspectives with Millenials but "*for MaaS to make a contribution to the sustainability of our cities, it needs to engender a paradigm shift not only in the way in which mobility is delivered but also in cultural appreciations and practical adoption of shared travel options. This shift is required for the majority of the population, not just the Millennials".*

6.4.4.3 Jago Dodson

Dodson is the youngest of the Australian triumvirate, is one of the leading authors on mobility and suburbia and is in essence concentrated on one theme, the car- related economic stress that suburbia faces now and will face even more when fossil fuel prices rise and global warming objectives should be reached. In *Shocking the Suburbs* (2006, together with Sipe) he noticed that in some areas high fuel prices give rise to changes in financial and consumption patterns. Oil prices have an influence on inflation levels in the Australian economy. Some taxes have been cut, on the basis of a rationale set out by former Prime Minister Howard ; "…the high price of petrol is having a depressing effect on people's livelihoods, people's incomes…."Dodson and Sipe consider that the problems of the outer suburbs could be mitigated by creating a public transport system, at the cost of spending money on highways.

In Australian suburbs a combination can be seen of extreme car dependence, a lack of public transport, a great number of kilometres travelled per household, with for poorer households not very fuel efficient cars. This all leads to vulnerability when higher prices for fossil fuels are at stake. Whether these prices are high as a result of oil scarcity, of policies related to energy transition or of pricing CO2 emissions is not so important. Dodson shifts in his arguments easily between these three different drivers. Whereas in *Unsettling Suburbia* the argument still centres around oil prices, in *In the Wrong Place at the Wrong Time* (2010) the shift to global warming and climate change is mad*e; "there is too limited potential to reduce transport emissions in suburbs" and "there is an urgency of mitigating climate change and reducing household exposure to declining petroleum security".*

Dodson broadens his argument in *Suburbs under an Energy Transition* (2012), explaining what a suburb constitutes ; land, mobility, energy and credit systems creating owner- occupancy. These elements have to be available to maintain suburbs, and when one more fails in its provision, suburban households, especially with lower incomes, start to worry. These worries are political important as suburbanites constitute in many OECD countries the greater part of the middle class. But suburbs are no stable locations, so there is always anxiety. Dodson is also clear that electric vehicles will not solve the transport problems of suburbs, as "*the newest most fuel- efficient vehicles are typically purchased by wealthier inner- urban households"* (Dodson, Sipe and Li, 2015) and "*suburban households face continued stress even as these new vehicles become more widely adopted in Australian cities*". For example, in Brisbane, the level of spatial intersection between the areas of high vehicle fuel efficiency improvements and the most oil vulnerable areas is very low (Li, Dodson, and Sipe, 2015).

Dodson offers in *Examining household relocation pressures from rising transport and housing costs* (Li, Dodson, Sipe, 2017) an interesting perspective for the years to come. Suburbia can be sustained by decreasing car dependence, and this can be reached by the consistent "*re- urbanisation*" of the suburbs. With higher densities it would be possible to create public transport systems that are appropriate for substituting for driving. And employment would also need to move to the central areas of these more densely populated suburbs. With this line of thinking Dodson broadens the paradigm shifts of Bannister with a suburban chapter!

6.4.5 The challenges and perspectives from the 12 authors or ; what is the common denominator?

At the end of this inspiring exercise, having read most that my twelve admired authors have written I arrived at an interesting conclusion. Although coming from different backgrounds and writing in different styles, attitudes, and languages there are many similarities. I will present a programme that arises out of their insights. But first an inventory of the current situation, based on their insights.

Current situation on mobility and land use, in relation to involuntary transport disadvantage, and global warming

1. ***The connection between the insights of mobility researchers and the creation of national mobility policies is lost***.

As Banister notes, the seriousness of the climate change in relation to mobility is not picked up by politicians through a lack of clear vision and the seductiveness of following the *high mobility option*. Neoliberalism is the dominant global orthodoxy with policy makers (Urry) , who still believe in strong links between infrastructure investments, economic growth and job creation, even as the academic literature suggests weaker links (Marsden). And everywhere the neoliberal ideology tends to push mobility as a norm (Fol). Most mobility researchers know that "predict and provide" does not work (Marsden). But it seems as if, quoting Canzler, the main actors on mobility – the companies as providers, the governments as framework composers and the users as demanders - have come to an arrangement for high mobility, whereby research is dominated by economic and engineering frames, with a positivistic attitude , leaving results from mobility research aside (Lanzendorf).

2. The researchers are negative on national policies on global warming and mobility presented thus far and ask for leadership

In the view of most researchers a paradigm shift towards sustainable development in mobility is necessary and is not that difficult to achieve, provided that there is both strong political and public support (Banister, Rammler, Kenworthy). But the helplessness of transport policy can be noted everywhere (Canzler). Marsden shows the ambivalence of government policies on global warming related to mobility, with strong texts, weak programs, and a lack of accountability frames and clear targets. In essence politics can be seen as cosmetically and full of declaratory commitments without real follow-up (also Rammler). Policies are written, but very little is happening in practice (Banister). And there is a bias towards popular, tangible and visual measures such as the construction of new infrastructure or vehicle technologies, whereas lasting changes are rarely triggered (Lanzendorf). Neo-liberal ideology and risk aversion by politicians are two major barriers in trying to reach sustainable mobility (Banister), also because politicians dislike to introduce changes where there are losers (Mulley).

3. Especially on the perspectives for poorer and non- car owning households a lack of attention in policy circles can be noted

High mobility is just supposed by politicians for all households (Fol). But it is clear that the high mobility option is extremely inequitable (Orfeuil), and relates to the classic situation where individual welfare is a much stronger force than societal welfare (Banister). Politicians sign a long series of decisions whose implicit assumption is that mobility and the personal use of a car are at the door of all (Orfeuil).

4. Mobility researchers have presented in the last decade a long list of proposals and solutions that have not been picked up at the national level

Many of these proposals do not seem to fit in the dominant neo- liberal ideology, who suggest that high mobility at the fastest and most efficient way is always good for economic growth. There is "s*tagnovation*", all available knowledge is mobilised to use the existing, but narrowly defined physical and institutional space to the outermost (Canzler). There is a slow real implementation of new notions , methods and scientific knowledge (Marsden). The hope is on technology fix (Lanzendorf), and on

other societal sectors who take with stronger policies the burden from mobility, or, in the words of Banister "it is commonly stated that carbon reductions in transport are difficult and expensive, suggesting that other sectors should curtail emissions. That is not acceptable, especially if reductions elsewhere are offset by increased mobility".

5. ***The situation seems less bad when moving to urban governments, here some reception of insights could be noted.***

More innovative and creative ideas are being developed at the municipal level (Lanzendorf). Cities and urban regions are willing to ban vehicles from specific areas, and consider liveability and sustainability as important themes (Rammler).The importance of the role of urban governments in realising lower or higher car dependence is identified (Lanzendorf, Fol). And in urban regions the former glamour of the car in dense, space and road- constrained environments has lost much of its shine, and numerous cities are shifting to polycentric frames better served by other modes of transport (Kenworthy).

6. ***All in all, when the current situation prevails, researchers paint for the future of mobility a rather gloomy picture*.**

With the endurance of the current situation it is clear that the mobility sector will not be able to deliver to the objectives of global warming and will remain "*das Sorgenkind*", the stupid child in reaching global warming and sustainability objectives (Canzler). Reducing CO2 emissions is very unlikely under the current weak planning regime (Bannister). But mobility responsibles will in some way be forced to act, because other societal sectors will start to press in the next decade. Urry foresees a mobility sector dominated by control via digitalization (the Big Brother scenario) , or can think of barbarism of unregulated climate change (the Hobbesian scenario). Mobility based in dominance on cars is costly and risky as oil shortages will be announced (Dodson) and climate change as a threat is increasingly problematic (Orfeuil).

Programme towards the future

From the insights of the 12 researchers a first programme for the future in the relations between global warming, land use, car dependence and accessibility can be sketched.

1. ***Researchers take involuntary transport disadvantage and car- related economic stress serious and present a spectrum of solutions***

The dominant policy approach privileges those with access to private vehicles and further privileges certain sets of activities (Marsden). Orfeuil presents a picture of the 20 % non- car households in France, spending more on transport in their households budgets, but travelling less, and having greater difficulties in reaching locations in an ever more car – based society, and explains that the locations of residences, work areas and amenities are more and more directed by the upper and middle class behaviour, for whom car use is not a problem (also Fol). He present a programme for action, focussing on acquisition of mobility skills, on subsidising travel costs for modest households, on mobility assistance programs, on audits on the social aspects of location choices. Mulley make a plea for public transport that is socially inclusive, and adapted to the vast array of journeys required to live a fulfilled and productive life in modern life. And Dodson gives insights in measures needed to lower the vulnerability of poorer suburban households, thus diminishing car related economic stress. Immobility is also a manifestation of social inequality (Motte – Baumvol).

2. ***To reach the objectives of global warming policy new mobility systems are needed***

Banister proposed his paradigm shift already 11 years go. Many elements of this shift, such as the focus on combinations of transport modes, slowing movement, and reasonable travel times instead of minimalization of travel times return in the proposals of other authors. Needed is a shift to the sharing

of car space, decreasing parking space, banning new road infrastructure investments, and shifting these investments to public transport and to interactive taxi services in rural areas, plus the creation of "Mobility as a Service"- solutions (Rammler). And needed is the provision of flexible transport services, creating access for more households, while still offering the ability to ensure already existing passengers not to lose their accessibility (Mulley).

3. ***A de- individualisation of car mobility is necessary, and sharing options create new perspectives, bus this all needs a paradigm shift in society***

To reach the capacity objectives needed for global warming, challenging private car ownership, restrictions to be placed on the car industry, and fighting the ambivalence of promoting low carbon mobility, while insisting in investments in transport infrastructure to promote economic growth are needed (Banister). And the same holds for ambitious and transparent CO2 emission limits, consistent management of public transport and parking space, support for smart grids in citizens hands, and organizing stakeholder networks (Canzler). As Rammler explains, the way to reach permanently sustainable mobility is through the de- individualisation of private mobility on the basis of a complete renewable energy base, a dramatic increase in the use of public transport, and a reorganization in our settlement and economic structure. This means that the value system of individuals and firms needs to change so that the car is not seen as the current dream that is promoted in advertisements. And realising "Mobility as a Service"- solutions asks a paradigm shift not only in the way in which mobility is delivered but also in cultural appreciations and practical adoption of shared travel options. This shift is required for the majority of the population, not just for the Millennials (Mulley).

4. ***Cities could be frontrunners, and should ban individual car mobility from their centres.***

The collective benefits of clean cities must be given higher priority than the individual mobility provided by the car (Banister). And it is desirable that cities no longer allow vehicles with internal combustion engines in their inner-city (Rammler). Frameworks of compact and high density urban forms, with car free centres, and superior public transport systems, plus well maintained green city spaces should be created (Kenworthy). And suburbia can be sustained by decreasing car dependence, and this can be reached by the consistent "re- urbanisation" of the suburbs. With higher densities it would be possible to create public transport systems that are appropriate for substituting for driving . (Dodson).

5. ***Investments in mobility have to be shifted from road infrastructures to public transport, to specific rural services and to re- urbanisation of suburbs***

A complete programme of work to make mobility inclusive and areas sustainable has to be created. Great investments are needed, but budgets are available. They just have to be redirected, shifted away from investments in road infrastructures towards investments on integrating urban and suburban policy, housing policies and mobility policies (Kenworthy), plus shifting towards greater budgets for providing public transport and cycling solutions. (Banister, also Mulley and Dodson). Urban policy is important as cities differ in their rate of car dependence. A focus on density, on for good planning of urban land use and on investments in public transport is needed (Kenworthy). And with higher densities it would be possible to create public transport and cycling systems that are appropriate for substituting for driving. Employment could also need to move from highway locations to central areas of these more densely populated suburbs (Dodson).

6. ***Electric driving is not the solution for global warming, as long as electric driving means just substituting the current car dependent practices by car dependent practices with other types of cars***

A bias on technological fix is not going to change the dominant policy approach , as this approach helps to sustain our existing conditions involving reliance on cars (Marsden). The current strong push for "

electro- mobility" is implicitly cast by engineers and technologists as a problem of replacing each kilometre driven by the current fleet of internal combustion engine vehicles with the same number of kilometres driven by electric vehicles (Kenworthy). And electric vehicles will not solve the transport problems of suburbs, as the newest most fuel- efficient vehicles are typically purchased by wealthier inner- urban households (Dodson). In essence, electric cars only make sense in a scenario of significantly scaled down demand for private motorized mobility (Kenworthy).

6.4.6 Splitting the two themes

In 6.3 I did choose to present information about realising inclusive transport and clarifying the contribution of mobility to realising the worldwide objectives for fighting global warming jointly. There were two reasons for doing so, the first one being that developing such a difficult objective as realising inclusive transport could never be fulfilled as a "stand alone"- activity. In this respect the need to also realise the mobility contribution to global warming in the same time frame can be seen as a supporting element.

Secondly, both elements should fit in the broader objective of finally arriving at sustainable mobility, which is about combining three categories of aspects; economical, environmental and social. In mobility can be seen what happens when one of the three aspect- categories, the economical (with its bias on economic growth, infrastructure investments and high mobility) suppresses the other two, the environmental (how to create mobility within accepted environmental norms and standards, with a relation to health issues) and the social (how to create equity in mobility and how to reach inclusive transport). The two weaker aspect- categories just have to be allies to decrease the economic dominance and to create the equilibrium necessary for sustainability!

It is now time to again split the two themes, and to move to the final approach for realising inclusive transport. First a look what the result of my exercise is in getting an inspiring contribution of passenger surface mobility to the fight against global warming. In the table I will present interventions discussed in this paragraph 6.3. I will do so at two levels; interventions for creating a better climate for action, and interventions directly useful for the objective.

Objective ; realising contribution mobility to global warming (own work)

Creating better climate for action	***Direct measures***
Fighting neo liberal ideology, with its high mobility option	Creating accountability frames
Criticising positivistic economic and engineering research frames	Fighting the current ambivalence in global warming mobility policies
Criticising technological fix	Defining clear targets
Setting up stronger planning regimes	*Taking reasonable travel times as standard for policies*
Challenging private car ownership	*Shifting investments to slow modes and public transport*
Banning road infrastructure investments	Banning fossil fuel cars from specific areas
Realising equity in contributions between the societal sectors	Decreasing parking space
Stimulating sharing mobility	Stimulating electric driving in a scenario of scaled down demand for private cars
	Supporting smart grids for citizens

1. Objective; realising inclusive transport (own work)

Creating better climate for action	***Direct measures***
Fighting neo liberal ideology, with its high mobility option	Acquisition of mobility skills
Criticising positivistic economic and engineering research frames	Subsidising travel costs for modest households
Less influence of upper classes in locational choices	Mobility assistance programs
Audits on social aspects of location choices	*Taking reasonable travel times as standard for policies*
Challenging private car ownership	*Shifting investments to slow modes and public transport*
Banning road infrastructure investments	Car free cities
Stimulating sharing mobility	Realising Mobility as a Service
	Making public transport useful for a wider array of trips

From the tables could be noted that there are at least 7 activities (the *cursive* ones) where the two objectives could and should join forces;

1. *At the ideological level* ; Fighting neo liberal ideology, with its high mobility option, criticising positivistic economic and engineering research frames, and taking reasonable travel times as standard for policies
2. *At the conceptual level* ; Challenging private car ownership and stimulating sharing mobility
3. *At the investment level* ; Banning road infrastructure investments and shifting investments to slow modes and public transport

6.5 Realising Inclusive Transport ; The Radical Approach

6.5.1 Introduction to the Radical Approach

In this paragraph I will propose a strategy to reach inclusive transport. We saw that Inclusive Transport, has two forms. The weaker form is just providing services through which transport and access to shops, hospitals, work etc. becomes available for all individuals and households, at affordable prices. The stronger form is *to create a far greater part of households using mobility in interaction with the involuntary transport disadvantaged*. It now looks as if there are car dependent households (a huge majority) and involuntary transport disadvantaged households (a minority) who have very little interests in common.

I will now connect to the problems sketched in chapters 2 and 3. How could we reach a greater independence in mobility for children, how could we support adolescents not to feel trapped in rural or peri- urban areas, how could young people living in the banlieus reach centre Paris or Lyon faster ? And how could we created safe, clever and fast mobility for the disabled. How could we avoid food deserts, how could we open up mobility for minorities and the poorest households? How could elderly easier make their trips to hospitals or to shopping malls? We saw in chapter 4 that these questions receive only scant attention in current policies, and we saw in chapter 5 that pragmatic solutions are often not working or give only temporary relief. One could state that there is *segregation in transport*, as these questions are not in hearts and minds of the majority of households, who just subscribe to the CDO, the Car Dependence Organisation that I introduced in 4.5.2.There is only a small intermediary

group consisting of choice travellers (sometimes the car, sometimes other modes for longer distances, mostly richer households) who cross the “experience borders”.

Realising inclusive transport means fighting segregation in passenger transport. This means that the car system has to be opened up, and that the dependence on cars for mobility should disappear. Households feeling themselves car dependent have no room to enter into dialogue on their mobility and just use the car for almost all trips.

The radical approach consists of four sub- strategies. The overall aim is the make the connections between the different households and individuals needing or wanting mobility. No segregation in mobility, but *creating a transport system that maximises to possibility to meet, via mobility, all sorts of people, and is basically about the power of joint experiences, dialogue and creating community via transport and transport services*.

The first sub- strategy was already introduced in 6.4.5. Realising inclusive transport fits in the broader development towards sustainable mobility and reaching objectives in the fight against global warming. A new system of mobility needs to be developed, focussing on with - as we saw in 6.4.6 - quite radical solutions. To wrap up ; a complete shift to decreasing parking space, banning new road infrastructure investments, shifting these investments to public transport, to cycling and to interactive taxi services in rural areas, plus the creation of “Mobility as a Service”- solutions and related to this framework also the transition to electric driving within this leading framework is essential.

Here the other three sub – strategies will be introduced. To realise inclusive transport it is necessary to open up the car dominance in two different ways ; cleaning up and avoiding car dependence in the mobility system (this creates the possibility of inclusive transport), and using the remaining cars to their full potential, which means sharing and far higher occupancy rates (this creates inclusive transport in practice) . The three sub-strategies thus focus on;

1. *Cleaning up and avoiding car dependence*. In 6.5.2 we will look at the arrangements in society that produce a still increasing car dependence in OECD countries. Car dependence leads immediately to segregation in mobility, as the majority of households are locked - in in another system than the non- car users.
2. *Using remaining cars to their full potential* (6.5.3). Now occupancy rates of cars, mostly having 5 to 7 seats are all time low, around 1,4 seats. This leads to congestion, but – more important- to enormous CO2 emissions and capacity an parking problems in urban areas. Driving alone in your car should be put in the same category as smoking in public spaces; you just don’t do it! Increasing occupancy rates creates potential for meeting other persons, leads to greater social cohesion and is helpful for reaching global warming objectives.
3. *Creating an inspiring policy on inclusive* (6.5.4) Whereas sub- strategies 1 and 2 open up the dominant mobility system, and develop this system for use by non- car owning households and individuals, in this sub- strategy a policy on social aspects of mobility, on rights on mobility and on equity in transport and mobility will be developed.

Creating Inclusive Transport via these sub- strategies will take some time, but will lead to a society that generates sustainability, social inclusion and trust. We have to break the last vestiges of the neo- liberal ideology, that forgot to think about social welfare and solidarity. But without an orientation to social welfare and solidarity we will never arrive at the right track, leading to sustainable development and social inclusion.

Car dependence has not arrived out of the blue. Car dependence, meaning that a big majority of households see car use as essential for their functioning in society, is in most OECD countries with us since 1985. Car dependence has to be operationalised. I tried to do this in my book *The Car- dependent Societ*y (2013). Accepting that trips made by other transport modes can be plus 70 % slower by other transport modes, in the Netherlands around 2010 some 40 % of all trips made by car and some 46 % of all car kilometres could be identified as car dependent, meaning that these trips and kilometres could not reasonably (the plus 70 % !) be made by other transport modes than the car. Most car dependent trips are made for escorting children, shopping and carrying heavy goods (Mattioli, Anable and Vrotsou, 2016). We created societies where car dependence is the current situation, where the CDO is dominant. And car dependence is still growing at a far faster rate than car use (which tends to stabilize in most richer OECD countries,Jeekel,2013).

Car dependence is in four ways problematic for the involuntary disadvantaged. At first, because there are since 30 years many normal life practices and experiences that are literally and figuratively “far away” for many non- car owning households and individuals. For example ; getting wood at DIY shops, , going to a cinema on a highway location, or going for drinks to another city and returning at night time. Secondly, because many of the investments budgets are directed towards provisions for the majority, which means that greater budgets are spent on fighting congestion compared to creating

better public transport. Thirdly, because car dependence creates further car dependence, as people buy cars when they note that for many activities and experiences a car seems to be needed, thus marginalising non- car owners even further. And lastly because car dependence in societies could lead to car purchase by households who in essence could not afford cars (for an example, Glasgow, where even poorest households with children, living very near to the city centre felt the need to buy a car, Curl, Clark and Kearns, 2017).

What sort of elements have resulted in this car dependence? In 4.7 I identified, next to budget cuts in public transport, a list of arrangements leading to sustained car . I will condensate this list to four important drivers for car dependence. The four drivers for car dependence are:

1. Time scheduling of society, and the constant need for flexibility
2. Dispersal of activities, highway locations and suburbia
3. Community light, protection against fear and predictability need
4. Instant gratification

Each of these four drivers towards car dependence has deep roots, and much has been published about these roots. To realise inclusive transport in its stronger form , these roots should be cut off, or even abolished. Otherwise it will remain standard practice to take the car at almost all times, for the great majority of trips. Most roots spring from the neo- liberal ideology, who supports flexibility, mono-functionality (every activity its own space), individualism, and instant gratification.

Societies in which the opposites of the roots of car dependence are prevailing - slowing down, integral design of spaces, community spirit and action and postponing of results - are better societies seen from the perspective of the involuntary transport disadvantaged. People can share experiences, distances are smaller, rushing around to get all appointments just in time stops, and long term insights are cherished. For me, the core of realising sustainability is just this. In such societies households and individuals not owning a car could far more easily find their way. But realising such a society will be a great challenge, looking at current practices, as I will present in a short overview of the four drivers.

On time scheduling and flexibility

In recent times a whole complex of time schedules, need for coordination, time scarcity, stress and hurriedness, has arisen. Time has become clock time, *staccato* time and not *legato* time (Zijderveld; De staccato samenleving, 1998). There is a more or less constant feeling of time pressure. Modern risk societies are characterised by a battle around time. As long as this battle is not made explicit, and not fought, feelings of time pressure, hurriedness and stress will probably increase. The Dutch Social Research Institute (SCP) presented in 2004 a report called *De Veeleisende Samenleving*. This reports contains an essay on stress and stress feelings in our times. Their principle is ; *"Our modern society is a demanding society. New possibilities are used to realise more, and not to reduce efforts and strains, thus realising more leisure and free time. Faster mobility leads to greater travel distances, to higher productivity, to more production, to higher incomes, to higher consumption, to women emancipation, to more task combiners and to higher mortgages. "More and fast" is in our societies more important than "less and relaxed".* (SCP,2004,36). Busyness can even be seen as a "badge of honour"(Gershuny, 2005).

The wish for sustainable development seems to be far away in this standard modern practice. Relaxation is a direction not sought after. But perhaps even more important is the insight of Hermsen (2009) who discusses the ownership of time. Who owns our time? To quote : " *wat we echter niet mogen vergeten is dat de manier waarop we over tijd nadenken maatgevend is voor de manier waarop we over onszelf en de wereld nadenken... de dreigende klimaatcrisis geeft aanleiding om de tijd te bevrijden uit de economische dwangbuis waar we hem eigenhandig in hebben gestopt.* ("what we should not forget is that the way we think about time is decisive for the way we think about ourselves and the world ... the threatening climate crisis gives reason to free the time from the economic straitjacket where we have put him with our own hands").

From a more political perspective Jarvis focusses in *City time ; managing the infrastructure of everyday life* (2004) on the political and societal context of time scarcity and hurriedness. Time scarcity is often framed as an individual problem, but contains also power elements and inequalities. Richer households can more easily mitigate time scarcity than poorer households. And service providing is now, in the neo- liberal climate, laid on households. Where formerly governments came to pick up your waste,. now households are expected to deliver increasing amounts of waste themselves at the dumps. Part of the time scarcity is a result of government decisions, of the moral climate, and even of status elements as you attain a higher status by explaining that you are very busy. And she finishes ; "…*do we care sufficiently about the consequence of escalating inequality, congestion, pollution and uneven development, to invest in public solutions to private coordination problems, when these threaten social cohesion and environmental sustainabilit*y"?

Until now, the answer has been; "no". And this answer could be no, because the car has acted as the great helper. The car is flexible, agile and fast, and is – together with the bicycle- the only transport mode that is able to connect swiftly to all different locations where activities are taking place. But the caveat is brought by Urry (2004) on this point as "*automobility is a system that coerces people into an intense flexibility. It forces people to juggle fragments of time so as to deal with the temporal and spatial constraints that it itself generates'.*

Less car dependence would be possible when we no longer accept time stress, acceleration, staccato time, and governments putting the burdens on us, instead of helping to provide services.

On dispersal of activities, highway locations and suburbia

In last three decades many functions have moved outside, from their original locations, as I discussed in 6.2.4. Needing more space, they became located outside more urban areas, in suburbs, but more often at locations along highways. This now holds true for shopping malls, furniture stores, Do it Yourself stores, equipment stores, offices, warehouses, hotels, cinema's. These new real estate developments were a function of push and pull. Push factors were the lack of space in urban regions, and the lack of parking space. Pull factors were the low prices of land, plus the possibilities to create vast parking spaces. All this moving out has led to extreme car dependent locations, and to increasing distances to reach activities and services. These developments, with often developers and local governments in the lead, have led to very unsustainable locations, creating huge CO2 emissions.

Banister and Kenworthy were among the first to criticise these developments and to construct narratives aiming at containment. But containment asks for strong urban visions, and for strong planning, elements not included in the prevailing neo- liberal ideology. However some urban governments showed vision, as was noted in Klinger, Kenworthy and Lanzendorf (2010), discussing differences in car dependence in German cities. But again, it seems that most households have grown accustomed to visiting the “non- places” created in suburbia or along highways. In recent years also public services, such as hospital or police offices moved out. And many housing estates have been built near to highways (see the discussion on Haagsche Beemden in 5.4). Many of the “non- places”” have minor accessibility by public transport, and remain locations where the segregation in passenger transport is lived, each and every day.

Less car dependence here would be possible when most highway locations would be cleaned up, which will only happen at a greater scale when a location- based CO2 pricing would be introduced. The work of Dodson , as introduced in 6.4.4.3 on re- urbanising suburbia would be helpful in creating solutions, as would a great increase in fossil fuel prices.

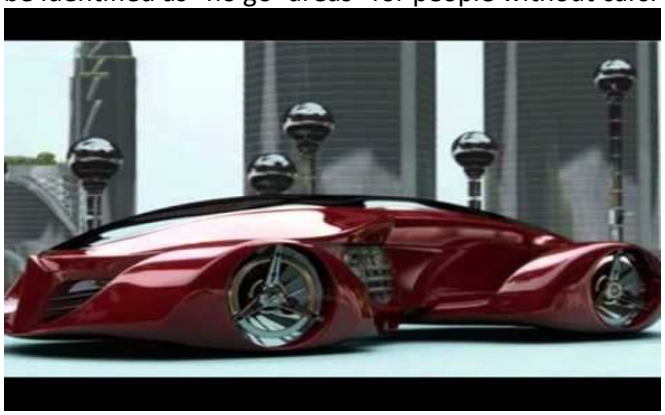
On community light, protection against fear and predictability need

People nowadays cherish controlled spaces. They seem afraid in public spaces, where they have to meet, and sometimes to connect to other people. Other human beings, and especially the ones you do not know, and that are out of your comfort zone, are seen as a thread in societies that are more and more risk averse. Although most people are happy with their lives, they dislike the great out open. As we noted in 6.2.3 distrust is getting more common than trust.

Cars are great protection machines. You can remain in your own sphere. Cars can feel just as a house, you do not have to relate to other human beings. Cars are the *“iron cages of modernity”* (Urry). The car is a solid and robust object. Drivers and passengers can be protected by cars, and the car can work as a defence against the unknown , and against real dangers of insecurity and criminality. In modern risk societies people have the chance and the capacity to exclude or not to allow many undesirable deeds, expectations, views and other humans beings. However, there is also another side, as cars can make the world less safe as safety for the car drivers can lead to lack of safety for other road users. Cars qualify in a world of anonymous engines, can dominate space, and this feels safe to their drivers and passengers. But it does not feel safe to vulnerable users of public spaces. The car can be seen as inherent ambiguous ; the car avoids danger, and creates danger, the car is there for mobility, but leads to immobility, by using space for others (for example street for children ‘s play).

Picture ; on dispersal , highway locations and suburbia
(http://www.amersfoortbusiness.com/werklocaties/calveen/)

And the car is part of a hybrid. On the road the driver and the car form that hybrid. For other participants in traffic the driver- car – hybrid can be seen as "*a monster in a metal cocoon"*, a cyborg with human and non- human characteristics (Beckmann, 2004). And especially highway locations can be identified as "no go- areas" for people without cars.



Less car dependence would be possible when people act from basic trust and not from distrust, in meeting and experiencing unknown people.

On instant gratification

This is probably the newest driver for car dependence. Let me start here with citing an Internet blog: *"The demand for instant gratification is everywhere. Call me now, send it now, buy it now. Consumers expect to find the services, products, and information that they want quickly and easily…. Instant gratification is an essential consumer trend that has placed a strong emphasis on immediacy for all brands, regardless of the industry".*

In this trend, the car fits perfectly. You want now a pizza, order it now, and drive to pick it up. You would like to go to the woods. Get in your car and drive. The idea of time schedules, normal in public transport, and of reserving and waiting for transport, important in Demand Responsive Systems, is getting obsolete fast, and seems only for the laggards, the involuntary transport disadvantaged. The lasting values of days past are indeed a thing of the past for many young consumers. "Instant gratification is the new religion" – announces one of the leading trend-scouting websites. But what is the relation of this megatrend to sharing and sustainability? Two researchers state on this issue "*People have self-control problems: We pursue immediate gratification in a way that we ourselves do not appreciate in the long run. Only recently have economists considered the behavioural and welfare implications of such time-inconsistent preferences".* There is an erosion of patience in modern societies, which makes it difficult to postpone reward, but, more important, makes it also difficult to plan and program. We should move out of such a spiral of instant activism. Here again, most people,

not accustomed to all digital possibilities, accept the new world relatively easy. Less car dependence has here a relation with postponing rewards, and with planning and looking forward.

Soron (2009) summarises in *Driven to Drive: Cars and the Problem of "Compulsory Consumption"* the situation on the arrangements that produce car dependence as follows " "*many of the worst consequences of automobile transportation today arise not from the frivolous nature of consumer wants, but from the ongoing relevance of human needs that, under prevailing living conditions, can only be met in unnecessary wasteful, destructive and individualized ways"* .

Summary of the four drivers

To conclude, to move away from car dependence probably this could be the strategy ;

Strategy to move away from car dependence (own work)

From	To
Time scheduling and flexibility	Slowing down
Dispersal of activities	Integral sustainable urban and suburban design
Community light, distrust and anxiety	Trust and social cohesion
Instant gratification	Investing in the future and postponing rewards

In all OECD countries there are now movements in the favourable direction. But will this happen? Reese (2016) puts this question into perspective by introducing three narratives on the automobile future. She identifies proponents for each of these three narratives , which she calls *accelerat*e (the perspective of the car drivers and automotive engineers, just keeping car dependence), *reverse* (creating local communities, sustainable mobility, the perspective of the neighbourhood inhabitants), and *find the off ramp*, the perspective of getting into real problems by not haven taken into account global warming and energy challenges.

Very much needs to be done to move to the *reverse* narrative. Behavioural change will be needed, that could lead to breaking habits. But this is not easy, as Schwanen, Banister and Anable (2012) argue. Behavioural change will necessitate a focus on a broad range of stakeholders, will need to challenge "*wider customs bound up with neoliberal capitalism and conducive to car ownership and growth, such as the valorisation of consumerism and private ownership".* And governments should change their *"neoliberal rationalities* ". Alternative habits such as walking and cycling should be learned and brought into practice. In an interesting article *Are cars the new tobacco?* (Douglas et.al (2011) the authors do make the comparison between the personal addiction to tobacco, and the societal addiction to the car.

I like the comparison also because we succeeded in getting tobacco out of the public space. The example is there. And we do not have to abolish cars, just redirect their use, and abolish the dependence. But it will ask something as you cannot get trust by management by speech. And you will not be able to clean up highway locations unless you decide to redirect investments at a great scale. On time, you should stand firm to leaders explaining that we need full flexibility because otherwise we lose the battle for prosperity with upcoming economic powers. Here, again, what is needed to win the fight against global warming, is probably nearly the same as what is needed to fight car dependence.

6.5.3 Using remaining cars to their full potential

A more relaxed society will lead to less segregation in transport and could create an "incubation environment" for sharing of transport modes. Opening up all transport modes and especially the car

is central in the second sub- strategy. Cars in themselves are not the problem in the future. What is problematic, and will be more problematic when we need to reach objectives in the fight against global warming are at least three car- related practices:

a. Individual use. Cars are mostly used individually. This individual use of car use creates road capacity problems, and creates segregation
b. Standing workless almost all the time. Car need space for parking. And again, this individual use creates capacity problems , this time in relation to build- up areas.
c. CO2 emissions. Driving alone instead of driving with 3 in one car (and thus leaving two cars home, at least in many circumstances) creates far higher emissions. Sharing car space is important part of the solution towards sustainable mobility.

Driving alone in cars should be discouraged from now on. Or as Rammler mentions it ; a *de-individualization of car mobility* is necessary. And helpful. Such a de- individualisation could take different forms. The weakest is to share the space in your private car with other people. This is called drive sharing, or in French : "*covoiturage*". You could also abandon the idea of a privately owned car. In essence there are two possibilities here ; car sharing (having one car with a number of households), or completely abandoning from ownership, and taking a subscription to rent a car when appropriate. Coming from the more collective side, car fleet by companies are now being created, to be used, or in normal private use or as a part of "Mobility as a Service"- solutions.

First some facts and figures. To start with *individual use*. Single use of cars is still increasing in most countries. I will present data from a few countries. At first the UK:

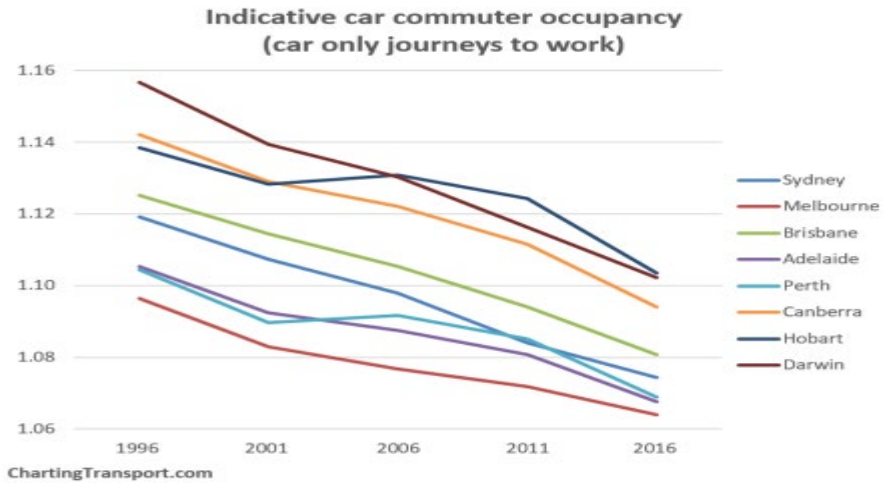
Car occupancy rate England, 2016

Car / van occupancy by trip purpose: England, 2016

Purpose[1]	Average car/van occupancy	Single occupancy rate *(percentage)*	Unweighted sample size (all car/van driver stages '000s)
Commuting	1,2	*86*	26
Business	1,2	*87*	7
Education	2,0	*37*	8
Shopping	1,6	*52*	26
Personal business	1,4	*69*	11
Leisure[2]	1,7	*55*	24
Holiday / day trip	2,0	*40*	5
Other including just walk	2,0	*36*	7
All purposes	1,5	*62*	114

As cars have mostly five to seven seats, the occupancy rate of an average British car is 1,5, meaning 25 %. So 75 % of the transport is just air. It now gets clear why there is so much congestion, when in majority air is transported, because as can be seen, the occupancy rate decreases in commuting to 1,2, meaning even 80 % "air" transport! Commuting means ; 86 % of the time travelling alone. From Australian figures can be seen that single car use in commuting is still growing there.

Car occupancy rate for commuting, Australian cities



Is it so difficult to share your car with someone is making the same commuting trip? It certainly was. But nowadays, with apps that could lead you to exactly the persons that will make more or less the same trip it will not be that problematic anymore. You can even get information about the persons who potentially can drive with you.

In almost all OECD countries in the last two decades the occupancy rate of cars has decreased. In Germany from 1990 1,56 persons per car to 2014 1,35 persons per car, and in the Netherlands from 2005 1,51 to 2016 1,38 persons per car. And in each country commuting is the most single use (Switzerland, 2015, even 91,6 %!). For education and leisure purpose the car is somewhat better filled.

On *standing workless*, Rammler calls the car not any longer "ein Fahrzeug" but "*ein Stehzeug*", as cars stand more or less 23 of all 24 hours. Capacity is needed to park the car. Parking space in urban areas is a rather obsolete function, as this space cannot be used for other objectives. Many cities are now adopting parking policy 2.0. In this frame, parking policies are no longer geared towards accommodating car, but to steering cars. Rather influential on this issue was the report in 2011 from the Institute for Transportation and Development Policy, a New York based knowledge centre (ITDF,2011). Following the report, a number of European cities have reoriented their parking policy, often related to the policy demands to comply with air quality or greenhouse gas targets. By way of regulating parking space, car use can be regulated. Indeed, in the end the amount of parking spaces available in a city is a political issue. City governments often use diminishing parking space as a governing tool. This is rather new, and not without fight. Through parking policies urban spaces can be defined in whether or not cars are allowed and for whom, for example for residents only. Parking policies have become a cornerstone in urban spatial planning. And in parking many cities have moved far beyond the still prevailing "predict and provide"- approach. But this means a lot of cruising in cities, searching for a parking place, and leading to air quality problems. You do not want this in sustainable cities. Parking is still priced too low, as the parking researcher Shoup (2005, 2017) explained in his *High Costs of Free Parking* , and he even goes one step further and states that parking requirements subsidize cars, increase traffic congestion, pollute the air, encourage sprawl, increase housing costs, degrade urban design, prevent walkability, damage the economy, and penalize poor people. He advises to remove parking requirements, to charge the right prices, and to spend revenues from parking for public services.

When cities create more car free zones, and strong parking 2.0 policies you can , when individual car use is not being discouraged, be confronted with the following difficult situation. Cars can drive over

the highways to the city, but are “blocked” in entering the city. In pictures, how to solve the connection?

> Pictures ; how to move into cities? (https://www.nu.nl/123546/video/snelwegen-staan-vol-door-extra-verkeer-lang-paasweekend.html, https://www.leekuanyewworldcityprize.com.sg/features_people_centric_cities.htm)

And on *CO2 emissions* driving alone in your car leads to huge emissions. When 30 persons have to commute from A to B, now 25 cars are used. When people travel together, with three persons per car only 10 cars are needed. You save with the 15 cars not on the road a lot of CO2 emissions and a lot of problems on using scarce space. Even driving with three persons in a fossil fuel car leads to less CO2 emissions than driving alone in an electric car! (Ecorys, 2016).

It is clear that one of the important solutions would be to ban driving alone in your car. It will take some time to act accordingly. But we can think of urban governments putting a ban on driving alone in their city, just as now ban on specific cars in low- emission zones are created.

There are huge barriers to overcome, as most people like travelling alone, and distrust their fellow human beings. Again, the role and function of trust in creating inclusive transport is crucial. When drivers are anxious about getting other people in their car, you will remain with the individualistic trends. Here, on *ridesharing*, we should remember the work of Kent (2013), explained in 6.2.2, where she clarifies that modern individualized people need ”ontological security”, operationalized via predictability, acceptance and autonomy. And people like to spend some time on their own, being able to listen to their favourite music, or just having some moments for themselves. However, as Dupré (2014) found out, obstacles were more often mentioned by non- sharers than by sharers. The real obstacle is the complexity and the uncertainty whether driving together will succeed. This all is quite understandable, but in the perspective of what is needed in terms of social cohesion and sustainable mobility only a minor issue. Here the two strategies enforce each other, as in a more relaxed society the anxiety and the wish to be on your own in a world of appointments will diminish.

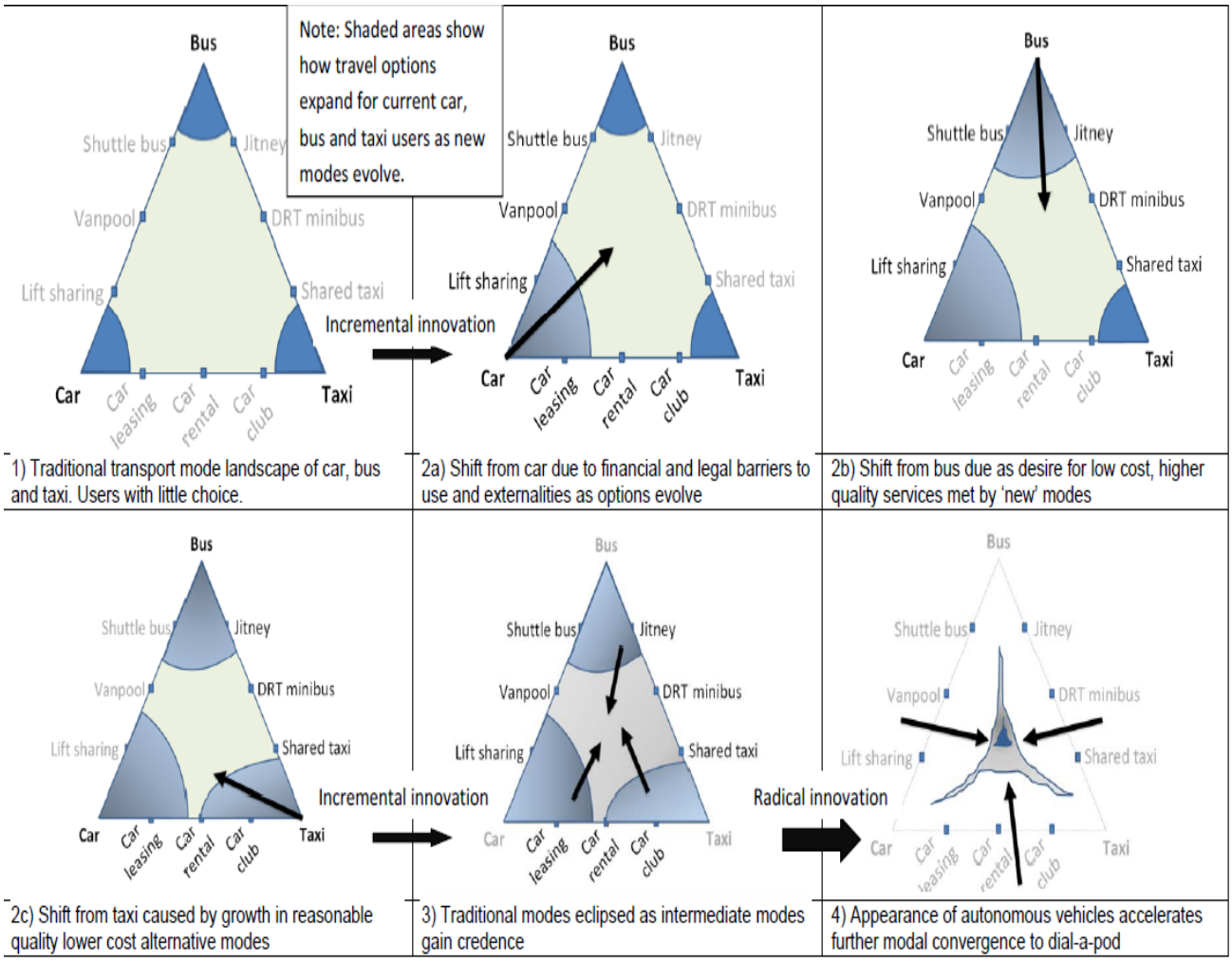
From ridesharing to *cars on demand*, a word which combines car sharing via rent, car sharing via ownership with a group and cars as elements in mobility as a service- supply. The difference between individual car ownership and cars on demand is an element of collaboration, with a company or with a group of friends. For cars on demand, as for ride sharing, it is essential to match cars, drivers and riders in real time. A variety of apps is coming available for this task. There is, as with ridesharing a difference between commercial services and free services. Here the difference is between combined car ownership with friends, who maintain the car(s) themselves or renting a car with a car rental company who maintains a fleet, or subscribing to a mobility provider. Also possible is an in- between

form, with company acting as a liaison between private car owners on the one hand and persons wanting to rent a car on the other.

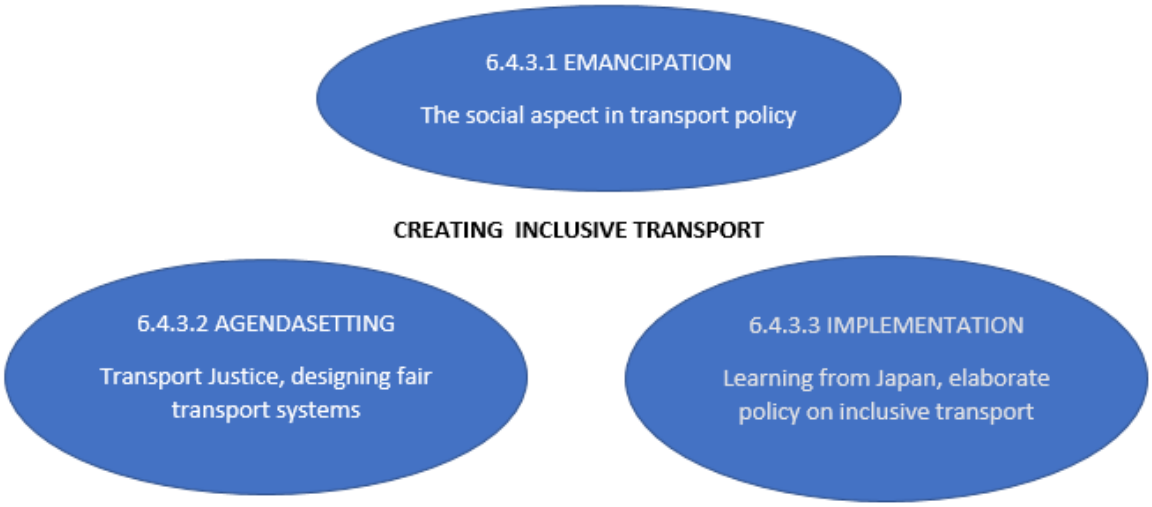
From the perspective of involuntary transport disadvantaged the great difference between ridesharing and car sharing is in the driving function. For carsharing at least somebody in the household needs a driving license. Carsharing will more often be a solution for households facing car- related economic stress, as the burden of ownership, with its fixed costs, maintenance and insurance falls away. Ridesharing is for most transport disadvantaged the most important service, as everybody can profit. More generic both ridesharing and carsharing could be disruptive to the individual single driving and single ownership model on car mobility that we know as the current practice. But this depends on the magnitude of the trend, and there is a caveat, presented by Kent and Dowling (2016): '*…peer to peer models of car on demand have the potential to peel away layers of redundancy inherent to the private car by enabling time or space in an otherwise idle car to be occupied. Commercial iterations, however, risk putting more cars on the road by providing for a parallel, rather than disruptive, system around the object of the car".*

It will be interesting to follow whether ridesharing and carsharing in its different forms will become standard practice, and integral elements in the new mobility systems. Looking at figures the evidence is still weak, but among younger households and individuals there is certainly a trend towards "*collaborative consumption*", sharing all sorts of commodities. When the idea of "collaborative consumption" will grow, the car can be used better to its full capacity. The greatest counter-trend seems to be "instant gratification", as households and individuals using ridesharing and carsharing should realise that the shared cars are not always available, and will be somewhat difficult to get, at least in its early stages, in weekends (clarified in Kim, 2015). Here the "I want it, and I want it now - trend fights with the "what's yours is mine" - trend of collaborative consumption! But a great future for carsharing and ridesharing could be possible. Enoch (2015) paints in *How a rapid modal convergence into a universal automated taxi service could be the future for local passenger transport* a four steps model, whereby the individual modes bus, taxi and private car retreat to a joint provision, which in the last step could be automated.

new future for local passenger transport (Enoch, 2015)



Creating Inclusive Transport (own work)



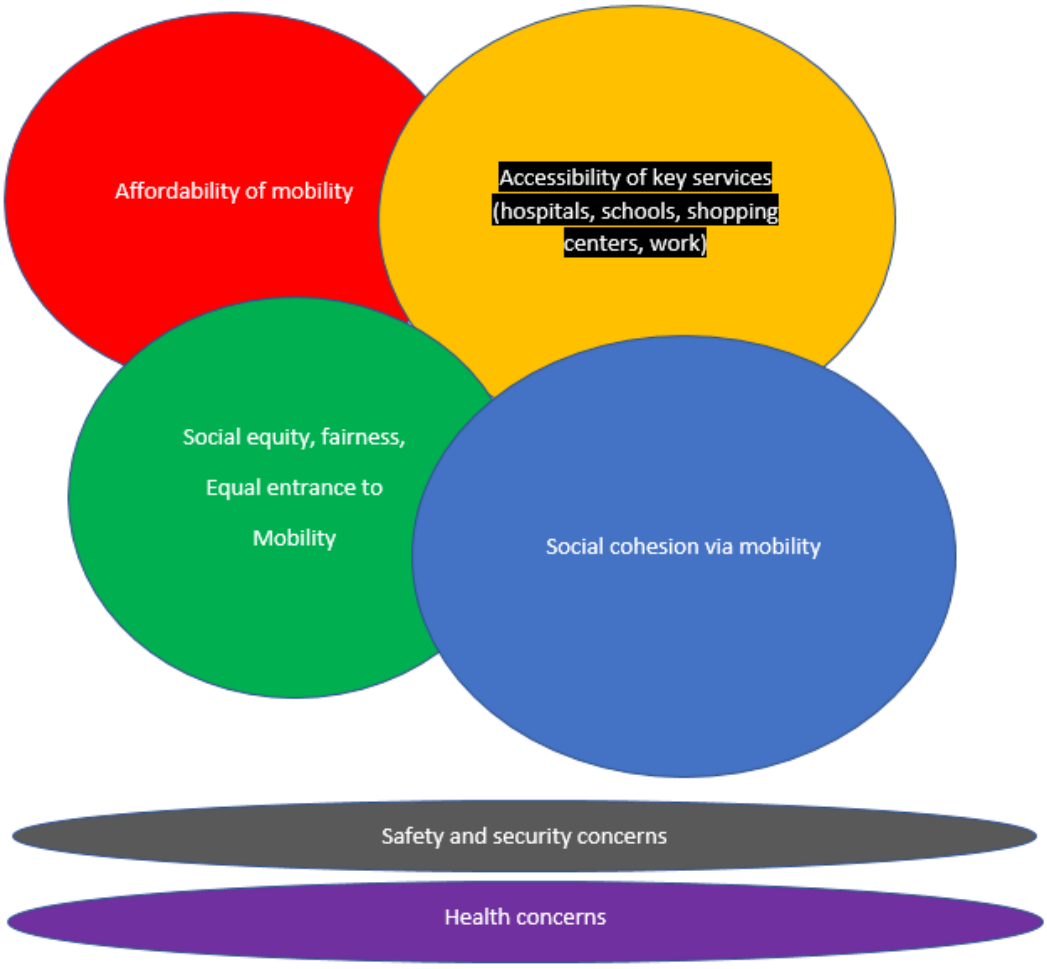
One should think that governments see a role in these processes towards better use of cars as this relates to their own goals on fighting global warming, creating liveable cities, and social cohesion in society. But in essence, especially national governments do not seem to know what to do. Leading policy makers consider this all very interesting, but leave no intervention traces. *For me it is clear that*

governments should stimulate all trends towards better use of the now existing car space. This means to create regulations that actively discourage driving alone, regulations to block further growth of individual ownership of cars, and financial stimulus for ridesharing and carsharing initiatives. This should be their basic position, possibly leading to the complete de- individualisation of car mobility, but certainly leading to better conditions for inclusive transport as cars will be opened up for the current transport disadvantaged households and individuals.

6.5.4 Creating an inspiring policy for Inclusive Transport

In this last sub- strategy the focus will be on creating policies to reach inclusive transport. These policies could be a support for all households and individuals facing involuntary transport disadvantages or car related economic stress. As we noticed, not very many helpful policies have been created thus far, although there certainly have been initiatives. But in general, national policy makers have considered the conditions of these households and individuals as a marginal issue. Many decisions they have made in past decades where even worsening the conditions of these households and individuals. To name a few ; decreasing service levels in public transport, creating highway locations, increasing public transport fares, increasing taxes for car driving by a flat rate, with for all households the same increase. When mitigation took place in relation to these decisions it was for specific strata in these households; for the disabled, the poor, the rural elderly. Policies found thus their rationale and their basis in segregation thinking: there is a dominant system, and we have to help a few marginal groups.

Inclusive transport starts from another basis. Transport systems should be inherently inclusive, should be defined and designed in such a way that all sorts of households and individuals could meet and exchange. ***Inclusive transport finds its basis in shared experiences***. The focus in this last sub- strategy is not so much on disadvantaged households but on creating inclusive, socially sound and fair transport systems.



Three elements will be discussed; the emancipation of the social aspect in transport systems and transport policies, the agenda setting for the future, creating inclusive and fair transport systems, and a first sight on implementation, where I will look at Japan, where first element of socially inclusive transport policy have been formulated.

6.5.3.1 Emancipation ; the social aspects in transport systems and transport policies

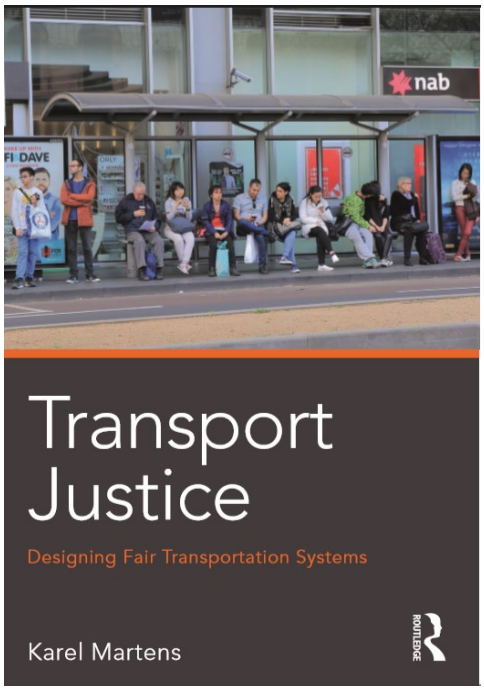
The social aspect of transport is the least studied. Economic aspects, environmental aspects, technological aspects have all greater libraries of publications, and are, as we saw in chapter 4 far more basic elements of transport policies and practices. Transport systems have long been seen as technical artefacts, and studies on these artefacts have been dominated by engineering and economic approaches, from a positivistic basis. The fate, or broader, the experiences of human beings and networks of households were for a long time not categories that fitted in the " thesaurus of transport". We have now two decades of studies on social and societal aspects of transport, but in real life practice only minor results of all this studies can be seen.

To give an example; an article of Lucas , from 2006, *Providing transport for social inclusion within a framework for environmental justice in the UK* is after 12 years still very actual. She mentions that accessibility planning for social inclusion is still in its infancy in the UK. We now know that it has never come out of this infancy. And she mentions in 2005 that "*achieving a socially just and environmentally sustainable system requires policies that balance effective fiscal, planning and "soft" measures to*

control excessive mobility and over- reliance on car-based travel whilst improving accessibility trough adequate and targeted investment of sustainable mode". I could just write the same in 2018! Zapata and Bates conclude in *Equity Planning Revisited* (2015) the same *; "the promise is unrealised*". What could be the reason for this failure? We already looked at reasons in chapters 4 and 5. But here the focus will be on intrinsic reasons, reasons that find their source in the conceptual state of art on the social aspects. Starting to read the literature on social aspects in transport in 2008 I must admit that I was struck by the many definitions, descriptions, inventories, operationalisations and indicators in this field. Every author did seem to build his or her own definition on what social aspects related to transport and transport systems were supposed to be. Social aspects, and the related concept of social sustainability in transport has been described as a "*nebulous concept'* (Dempsey, Brown and Bramley., 2012), as a *"concept in chaos*" (Vallance, Perkins and Dixon, 2011), with little consensus. I did come across many definitions and descriptions in my short study on *Social Sustainability and Smart Mobility* (2016). From my perspective, as a newcomer at age in academic transport research, it is interesting to analyse why researchers do not see or do not feel the need to create a clear system of definitions and indicators they all can use and take profit from. In academic life there will always be a trend to differentiation, and this is not the problem, it is even fruitful, helpful, and probably a motor behind scientific progress. The problem is that the other trend, of wrapping up, of integrating, of creating joint narratives, is almost completely lacking or invisible on the social aspects of transport and mobility. It is as if academic researchers have a sort of believe that their research is in no way interesting for policy or practice. At least, most researchers keep on writing their articles for their journals and do not seem to feel a need and an urge to create joint narratives (Lucas being one of the exceptions here! (Lucas (2012, and Lucas et.al, 2016a)).

With blurred and differentiated concepts you have no story to tell to policy and practice, and this is what Litman (2012) signals : "*social equity objectives receive less systematic analysis; they may be considered during political negotiations and through public involvement processes, but there are no standard methodologies for evaluating social equity impacts*". On this theme Miciukiewicz and Vigar (2012) remark ; "*research on the social aspects of transport systems is often considered too complex and too uncertain to be utilised by policy makers*". What I would like to do is to search, again, for the common denominator. What are after reading a great number of publications (to name a few; Solomon and Thitheridge, 2009, Dempsey, Brown and Bramley, 2012, Miciukiewicz an Vigar, 2012, Jones and Lucas, 2012, Litman, 2012, Manaugh, Badami and El-Geneidy, 2015, Haugen, 2011, Smith, Axon and Darton, 2013, Walker et.al, 2006) the most cited and mentioned aspects? I will present these in six blocks, and explain each block separately. This all will remain at a rather generic level, as I am not striving for academic rigour here, but for getting an emancipation of the social aspects in looking at transport systems, and in designing transport policies.

book of Karel Martens on Transport Justice



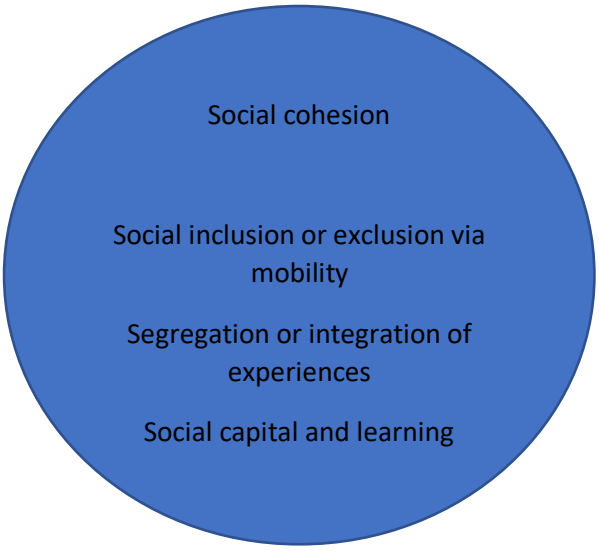
Looking at the literature there are four more or less related aspects, and two aspects, that can be considered more transversal. To start with these two; safety and security concerns are mentioned in most publications. Safety and security could be seen broadly; this is about traffic safety, but also about feeling safe in public transport. It is about the hardware – how to create safe infrastructures- and about the software – how to create a safety culture in transport? Also security is broad, as it is about privacy issues, and about the fight against terrorism in transport. The aspects of safety and security can be seen as the more successful aspects in the social aspects- domain, as these are seen as important by policy makers and practitioners. In most countries this aspect has its own networks, conferences and publications, a little bit aside from other researchers. The same holds for the health aspects. Here the relationship with the environmental aspects is clear. But health aspects in and of the transport system are still in a process of emancipation, as Singleton and Clifton (2017) noticed in an article about guidance statements and performance measures on health in US metropolitan long range transportation plans.

Now a look to each of the four building blocks of the inter-related aspects.

To start with *affordability*. This is a rather straightforward aspect, related to specifically transport related economic stress. It is about the price of transport, about the price of purchase, maintaining and using a vehicle, about the fare prices in public transport, about taxes in transport. And it is about special arrangements to mitigate costs for specific groups, such as the poor, the disabled, the elderly. An important question is whether there are thresholds set on affordability. Also important is whether data are available how much costs have to be made for households and individuals, creating a basis for "early warning" of greater inequity.

Accessibility is a core aspect in this book. Accessibility is also a central word in the social justice literature that will be central in 6.5.3.2. Can key services be accessed at all times, within normal budgets? And are all locations where activities take place to be reached by all households and individuals in a reasonable time period and with reasonable costs? Also relevant before making trips is the potential accessibility. Do households and individuals perceive services and locations to be accessible? Or are these services and locations just out of their "travel horizons" (Morris,2006) . How is accessibility operationalised by policy makers and practitioners?

Social equity is the most political of all aspects. In essence it is about fairness (Sustainable Development Commission, 2011). Do all households and individuals get a fair entrance to all transport modes, or is there discrimination against minorities, against non- car owners. Are persons with disabilities accommodated? And are the burdens and dangers of transport more or less distributed in a fair way, and are investments done by governments more or less evenly spread over all households and individuals? There are different approaches to discuss and elaborate social equity related to transport. Because this aspect is so "value- intensive" many policy makers often tend to strategically forget this aspect, as they hope to convince with depoliticised arguments, related to technical and economic frames stemming from positivism and neo- classical economics. On the attempts to re- politicise transport policy Keblowski, Bassens and van Criekingen (2016) present an interesting storyline.



Social cohesion is the most abstract of the four interrelated aspects. In essence it is about the role the mobility arrangements (such as the dominance of the car system, or the specifics of cycling systems in the Netherlands) play in building or splitting modern societies. It is about whether arrangements and investments will lead to segregation of mobility experiences or on building joint narratives on what mobility is and should be in the future, looking at the challenges and the possibilities. And it is about the learning capacity of societies in their mobile behaviour and about the social capital that can be built and destroyed via arrangements of mobility, such as

the situation that many people now fear walking in public spaces, that often did develop into car infrastructures.

These four aspects can be separated, but there are many connections. For example; affordability is very important for social equity. And the score on social equity is important for social cohesion. I will leave the intricate connecting schemes to the social scientists, but here two other remarks need to be made. The first one is that the next step would be to develop a short list of indicators for each of the six aspects. This list of probably 10 to 12 indicators could function as a "memory set" for policy makers when creating integral transport plans or transport projects. And this list should be made obligatory to use. It can act as a basis for the work on Inclusive Transport. To work along these lines would ask for pragmatism of all stakeholders. Yes, we can analyse for ages how exactly social equity in transport contributes to social cohesion in modern western societies. But I feel an urgency to move forward by trial and error, and I like the approach taken by Japan (see 6.5.3.3) that just started and the approach of Manaugh, Badani and El- Geneidy (2015) as they write: *"suggestions for comprehensive measures or indicators to capture social equity objectives for multiple groups over time are;*

- *changes in accessibility for desired (work and non- work) destinations, for various, but in particular disadvantaged groups,*
- *the difference in journey times, for work trips and to access essential services, between car and public transit, and between top and bottom income quintiles*
- *the difference between top and bottom income quintiles in the percentage share of household expenditure on transport*
- *the difference between car users and non- motorised users in traffic deaths and injuries, on a per trip basis"*

And they write; "*a plan with these kinds of indicators could probably go a long way toward making social equity (*the word is used here as the overall concept, it looks! HJ*) a less "intangible" aspect in transportation planning".* I could not agree more. We do not need more analytical articles, but have to create consensus on a set of pragmatic indicators, and this is a good start!

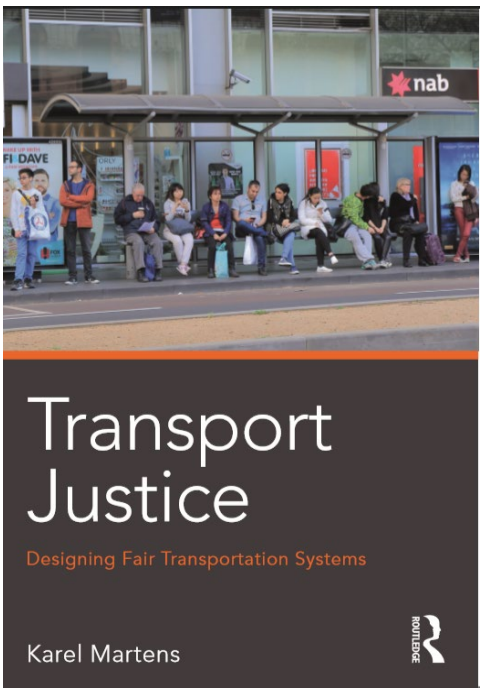
The second remark is about the relation of this work on social aspects with the technology developments that are taken place in the mobility domain. The "social" needs emancipation in transport but should not create its own world, separated from new developments. Here the concept of socio- technical transition, as developed in the *Multi - Level Perspective* could help. The connection to this body of academic work (see for example Geels, 2012) is useful, once the investment in creating clarification and consensus is done.

Important in each emancipation process is to look for allies. In this chapter we already found an ally in the need and challenge to reach in mobility the world wide objectives in the fight against global warming. Forces could be joined in fighting neo liberal ideology, in criticising positivistic economic and engineering research frames, and in taking reasonable travel times as standard for policies. And as evaluating tools need to be developed, relation to indicators to measures performance in the next three decades towards the 2050 targets, the "social aspects set" could be fit in.

But there is a caveat here. Whereas at the strategic and the generic level reaching inclusive transport and realising sustainable mobility could indeed be "brothers in arms", at the most practical levels this consensus could move. There is now an interesting series of tensions between these two objectives in practices. A short overview. Mattioli (2016) discusses a tension that could exist between ensuring fait levels of access and the need to achieve rapid reductions in transport emissions and energy consumption, especially for poorer car owning households when no support policies in the financial spheres are offered. In the same direction hints Harrison (2013) when she concludes that "*coercive*

policies aimed at promoting introduction of low carbon car are permissible, as long as there is provision to ensure that their impact on mobility does not allow additional financial burdens on those who are already amongst the worst off in society". Note that both situations are about car related economic stress. Boussauw and Vanoutrive (2017) present a number of paradoxes related to sustainable mobility and social equity. In all the situations mentioned poorer car owning households can be worse off by measures taken with more ecological foci in mind than richer households. To reach consensus asks for mitigating measures, but the cooperation does not need to break.

6.5.4.2 Social Justice in mobility



Fairness in relation to transport and mobility is mostly discussed related to financial equity; are car drivers paying too little or too much in relation to public transport users, or is it the other way around. And is the Treasury taking profit from mobility or delivering services in the appropriate amount? Here the focus will be on two other aspects of fairness. The first is whether transport modes are treated fair. Gossling (2016) clarifies that there are great differences in political treatment of transport modes in cities, with cyclist and pedestrians being exposed to pollution from car traffic and not getting appropriate infrastructures. Most urban transport infrastructure remains allocated to cars, and car in this perspective not called "just" in the concept of just cities (Fainstein, 2010).

The second question, more central here, is whether all individuals and households receive a fair access to locations at all times, considering that at these locations important activities for these individuals and households are taking place. This question relates to the question whether the transport system as they are now functioning create a reasonable access for all. What is reasonable is always a matter of debate, but the situation that at least 10-15 % of all households face involuntary transport disadvantages or car related economic stress seems unreasonable.

Transport systems are seldom discussed in this way. When do transport systems produce fairness? This is, as Martens (2016), a key author in this domain, writes about "*the normative assessment of the transportation system"*. There seems to be at least two reasons for this lack of normative assessment, the first being that the dominance of traditional economic and engineering frames leads to "taken for granted"- positions, such as; we provide infrastructure and public transport that everybody can use, any questions? Researchers and policy makers are just not very interested in moving a few levels deeper, as this could create more difficult problems, as we analysed in chapter 4. "Following Wisely" seems the best they are supposed to do. The other reason needs somewhat more elaboration. There are many thinkers on social justice, on fairness, and many theories. But all these theories, from thinkers such as Rawls, or Sen (capabilities approach, see Beyazit, 2011), or Nussbaum, are fundamentally a-spatial, not concerned with question of providing access in time and space, and in different geographical areas. Martens (2016) on this issue ""*the exploration of justice in the domain of transportation can therefore never be simply a matter of applying" theories of social justice to*

transportation. The explorations will always require the extension of a theory to account for the fundamental spatiality of human life."

Folllowing Martens (2016), the central theme related to fairness should be accessibility, the ease with which a person can reach places, where activities take place. The distribution of this accessibility is shaped by a combination of transport policies, land- use policies, and service (activity) delivery policies. What is needed for everybody is a guarantee on a sufficient level of accessibility. That has to be realised in a current situation with a "*dominant car- road system shaping land-use patterns, by a substantial share of the population excluded from the use of that dominant system, by a significant share of the population living on a subsistence income that is below the floor income, and by a de facto random assignment of residential locations"* .

The guarantee should in his thinking be provided to the *possibility* of persons to get access and engage in a variety of out-of- home activities. And it should handle about sufficient access. "*Sufficient"* is word that acknowledges the need for deliberation. What could be considered sufficient is a matter of societal debate, based on real life experiences of individuals, the sort of experiences I discussed in chapters 2 and 3. In essence, mobility research should find its start here, in the situations of individuals and households, and not on something abstract such as the "functioning of the transport system". There is a sufficiency range, an insufficiency range, and a domain of disagreement. But the very existence of such an insufficiency range means that policies to reach sufficient accessibility should be formulated. A "right on accessibility" should be provided. Pereira, Schwanen and Banister (2017) seem to arrive at a related conclusion being supportive to "*the ideas of setting minimum standards of accessibility to key destinations, which should be guaranteed by the government through social or transport policies if necessary".* At this moment such a right on accessibility is lacking, meaning, as we saw in chapter 5, meaning that providing mobility leading to accessibility is now framed as a *charity*, offered by governments and volunteers to "help" poor and disadvantaged households.

Jeekel and Martens (2017) discussed why such a situation, which looks 19th century , still exists in transport and mobility. For the provision of at least three other services – health care, education and housing- another principle for provision has been chosen in most OECD countries. For health care and education this could be formulated as "the same access for all". Everybody is entitled to the same entrance to health care systems, and the same holds for education. Transport and accessibility can best be compared with housing. As most households can provide for housing themselves here systems of providing access to decent housing are created .In virtually all developed countries, housing policies are based on firm and widely shared equity principles. The equity principle underpinning housing regimes is often enshrined in national constitutions. In such cases, the underpinning equity principle has taken on the form of a right, i.e. the right to adequate housing. Compared to three other services, mobility cannot even be considered a 'pillar' of modern welfare states (Jeekel and Martens, 2017). States do spend a substantial share of their budget on transport infrastructure and services, but the extent and direction of this spending is, as I analysed in chapter 4, based on notions of economic efficiency rather than considerations of welfare and equity. And private expenditures take up a large share of total spending, notably through the purchase of vehicles and fuel. Most households are able to buy both commodities, as well as afford the taxes that are used to finance, maintain and operate public infrastructures, from their incomes.

Again, it seems "taken for granted" that this is normal practice, whereas we know that, just as in housing, there is a substantial percentage of individuals and households not able to provide for mobility and access fully by itself, at least not without great shares of the budgets. What we (Jeekel and Martens, 2017) aim at is the following: "*defining the provision of a service as a human right generates public and political support. Governments are held accountable by advocacy groups and*

ultimately the courts to take responsibility to protect human rights and provide the required services. While mobility and accessibility are implicitly mentioned in the Universal Declaration of Human Rights (see above), they are not mentioned explicitly. Clearly, formulating a human right is as much the end of a process of debate, advocacy and decision-making, as its beginning. Yet, the transport domain could clearly benefit if interested parties would actively advocate a human right to (sufficient) mobility or (sufficient) accessibility. The extensive body of literature on transport-related social exclusion could serve as the empirical basis for such a demand "

Guaranteeing rights to mobility and accessibility at a sufficient level for everyone has, as Martens (2016) concludes, fundamental consequences for the financing of transport systems. For the fairness and social justice perspective there are two components in financing. The first is related to the domain of sufficiency. This component can be completely based on user fees. Users get sufficient working transport system, and pay for these systems. The other component is related to the domain of insufficiency, and has as its basis investments and subsidies aimed at reaching the sufficiency level for all. This component should be financed via the government with a fair taxation scheme. It will take time before all involuntary transport disadvantaged households and individual will reach the sufficiency level in accessibility, and before the stress burden is diminished for the households that now face car related economic stress, because the task is huge. And there are political battles to be fought, at least on two levels. The first is whether all negative externalities of the sufficient system should be included in the user fees. And the second, related one, is about the role of the Treasury, who has, as we saw in 4.6 a rather strange role in receiving billions from car related taxes without fully clarifying how much of this budget is ploughed back into mobility and transport. For me it is clear that creating legal rights to mobility and accessibility for transport disadvantaged individuals and households , just as is completely normal and accepted in housing, health care and education - and thus leaving the charity- is a paradigmatic but necessary change. Realising mobility rights can even lead to fights, as could be seen in the 2013 mobilizations in Rio de Janeiro (Verlinghieri and Venturini, 2017).

To start creating a policy on inclusive transport a good insight in the state of art of potential accessibility for different groups of individuals and households is needed. Which individuals and households face accessibility problems? Here Part A of this book could be helpful. And here also the indicators provided by Manaugh, Badani and El- Geneidy (2015) could be a good start, because these indicators are practical and could deliver also insight in the state of art on the broader social aspects of mobility in the area. Parallel a political and legal process should start aimed at creating legal rights to accessibility and mobility for all. A norm or standard on what can be considered "sufficient" should be elaborated. And finally a national plan, creating a framework for the work in the areas is needed. All work should find its basis in the real life- experiences of individuals and households, supported by data, statistics and interactive methods from GIS (Geographical Information Systems).

6.5.4.3 Learning from Japan

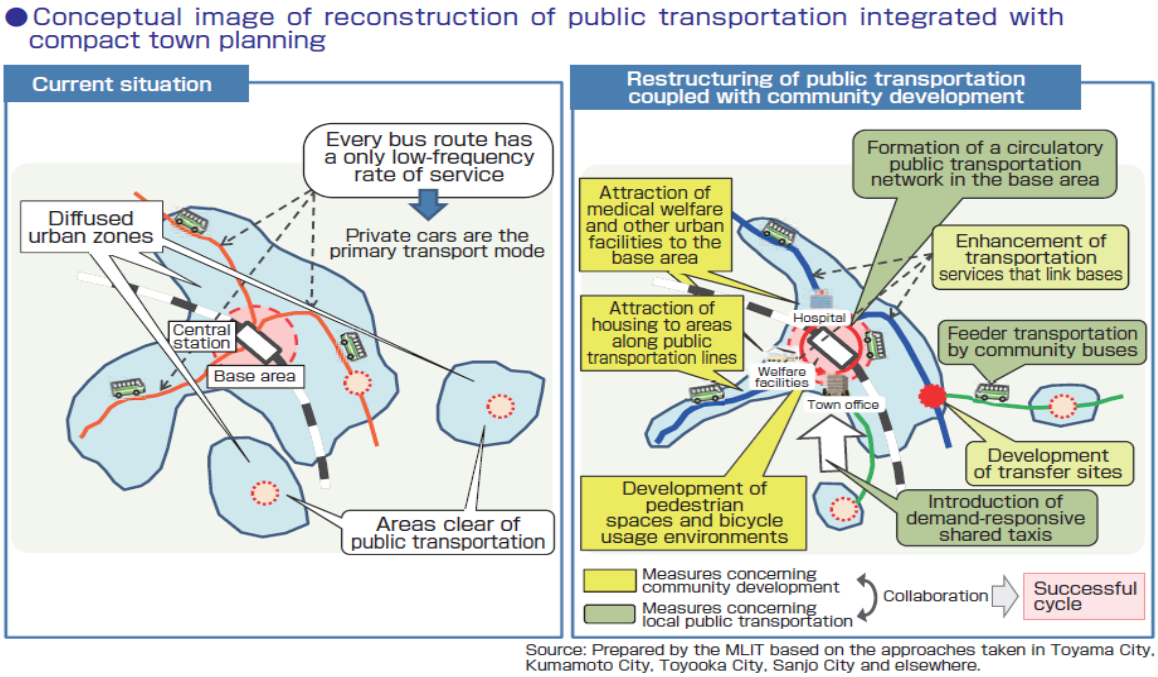
We saw in 4.2 that most countries did not create a national policy on inclusive transport. However, there were two exceptions; Norway and Japan. Japan needs attention, as it not only has an elaborate policy on inclusive transport and diminishing involuntary transport disadvantage, but also far less car dependence in its overall mobility than most richer OECD countries. In some respects Japan can be seen as exemplary for the direction other OECD countries should take.

Less car dependence

In Japan in 2014 the comparison between train and car in kilometres travelled was 37: 63 (not taking into account other modes!) , in Switzerland (the best rail country in Europe, 2016) 19 : 81, and in the Netherlands (average in Europe, 2016) 13;: 87.

Secondly , Japan has a rich tradition in spatial planning. A system of “eco- cities” with appropriate funding has been set up, showing how cities could develop to sustainable cities, with combining planning for compactness and transport services.

integration of mobility planning and spatial planning in Japan

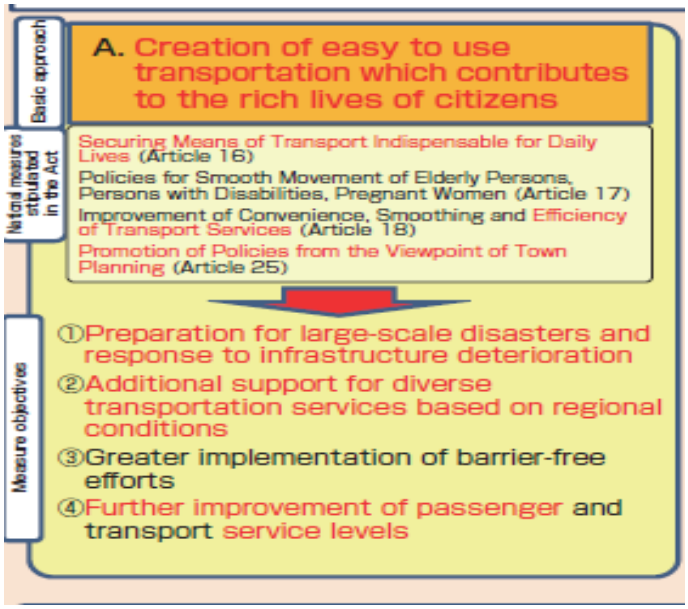


Source: Prepared by the MLIT based on the approaches taken in Toyama City, Kumamoto City, Toyooka City, Sanjo City and elsewhere.

Inclusive Transport based on laws, and plans

Japan decided in 2013 on an Basic Act on Transport Policy at the end of 2013. The act has five key policy areas. These five areas have been comprised to three pillars in the First Basic Pan on Transport Policy, based on the Act, and published in 2014 (Ministry of Land, Infrastructure, Transport and Tourism Japan,2014). Two pillars are almost the same as in all other countries; establishing international and interregional passenger and freight systems as a basis of growth and prosperity, and creating safe and sustainable transport. But the third pillar is the interesting one, as it is *about the creation of easy to use transportation which contributes to the rich lives of citizens.*

First pillar of the National Transport Plan of Japan (Ministry LITT, Japan, 2014)



The domain of inclusive transport is one of the three pillars of national policy. And the plan is based on articles of the Act, containing;

- Securing means of transport indispensable for daily lives
- Creating smooth movement for elderly, disabled and pregnant women
- Improving convenience and efficiency of transport services
- And aligning transport investments with urban development

For the total plan 93 key performance indicators have been developed, of which 11 relate to this pillar;

the 11 performance indicators for Inclusive Transport (Ministry Japan, 2014)

Target	Intent	Performance indicators
Reconstruct the regional transport networks under local governments' initiatives, coordinating with town planning policies	Vitalize local public transport services under coordination with relevant measures to create active and unique communities, taking into account population decrease, super-aging, and reliance on automobiles.	Regional public transport network plans： 100 plans On-demand transport services ： 311 municipalities (2013) 700 municipalities
Encourage deployment of various transport services taking into account local circumstances	Provide new transport services with convenience, comfort, and efficiency responding to changing society with population decrease and super-aging	Proportion of light rail vehicle ： about 25% (2013) to 35% Community cycle ： 54 municipalities (2013) to 100 municipalities
Make barrier-free transport more familiar	Realize the smooth transportation in the super-aging community and the	Accessible bus ： 44% (2013) to about 70% No gap on major railway stations ： 83% (2013) to almost 100%

	society where all can participate in, considering Tokyo 2020 Olympic and Paralympic games.	Platform doors ： 583 stations (2013) to about 800 stations Indicators
Further raise the service levels for passenger transport and logistics	Improve worldwide leading field in transporting people & goods to help realize the rich lives of the citizens	Prefectures where interoperable transport smart cards not available ： 12 prefectures (2013) to 0 ・Number of lines with bus location system ： 11,684 lines (2014) to 17,000 lines

There is also a relation with the National Infrastructure Plan, that was enhanced in 2015. A text from the Country Review of the OECD (2016) shows the connection:

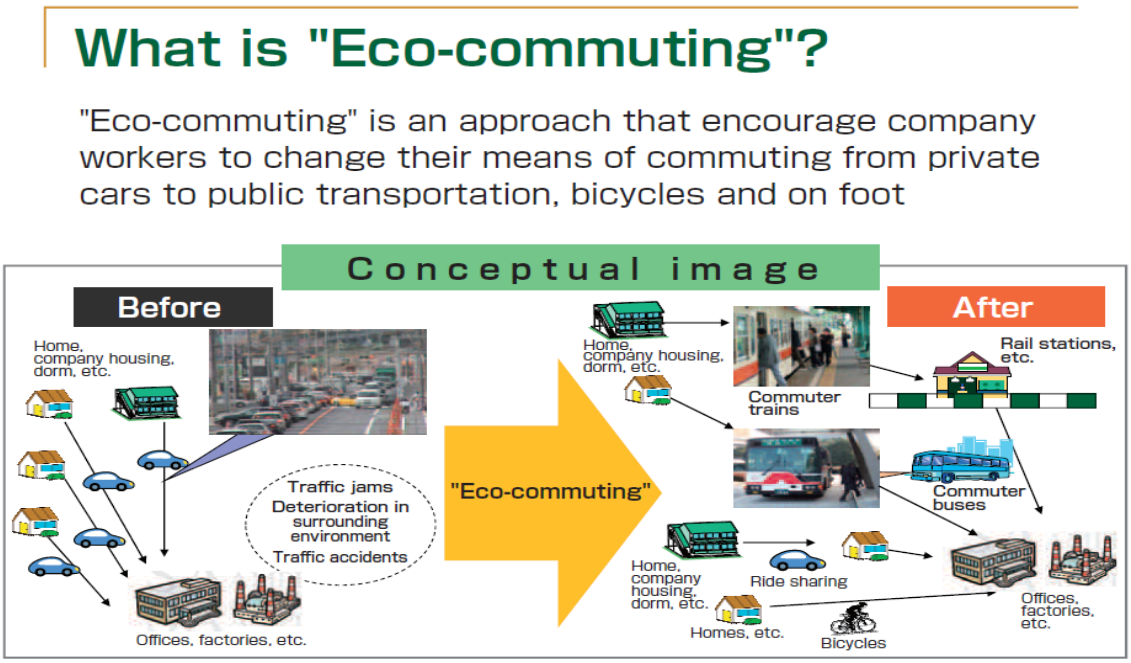
A further priority for infrastructure policy is to facilitate mobility for the elderly and disabled. Under current legislation, there are mandatory "Accessibility Standards" for certain categories of newly built facilities (such as passenger facilities, various vehicles, roads, off-street parking facilities, city parks and buildings). There are also requirements for upgrading some existing facilities. In accordance with the local accessibility plans created by municipalities, focused and integrated promotion of accessibility is carried out in priority development districts to increase "caring for accessibility." In addition, "accessibility workshops" teach people how to provide assistance and to provide virtual experience of being elderly or disabled.

The National Infrastructure Plan is implemented in co-ordination with the National Spatial Plan and the Basic Plan on Transport Policy. Implementation is monitored by the Council for National Infrastructure, and administrative evaluation is conducted in light of the priority goals defined in the plan.

So, Japan has an act including inclusive transport, has a transport plan based on this act, an infrastructure plan also based on this act, has key performance indicators, has by law made the connection between transport investments and urban development, has local plan and national infrastructure promotion towards “caring for accessibility”, and creates workshops to provide virtual experience of being elderly or disabled. This is a rich framework, not to be found anywhere else in the OECD. However, Shibayama (2017) presents a caveat to too much optimism, as Japan’s transport policy is still too much single mode oriented.

Two elements will be introduced as exemplary. The first is green commuting. In this government program Japans integrates the idea of using public transport and the active modes for commuting with ridesharing.

1. Eco- commuting in Japan



And finally the care and support for the elderly and the disabled. Japan is a country where the population is decreasing, and where the share of elderly in the population is high. In an article the transport situation of elderly in Australia and Japan was compared (Somenahalli et. al, 2016).

Ageing issues are seen as opportunities rather than as burden, creating platforms and bringing resources and technologies. It is seen as important , and conditioned by law, to build barrier-free passenger and traffic facilities, vehicles, homes and public facilities. To cite ; "*another important difference in Japan's public transport's policy is that the developments are planned as social infrastructure responsive to the ageing society and not just to increase competition with car usage*". Social inclusion is high on the agenda. To give an example; after driving cessation it is recognised that transportation needs need to be met by other means. In Japan many community – based transport services have been created , whereby volunteer drivers just use their own cars provide door-to-door transportation services for nearby elderly residents. Also here a caveat, as in rural areas there is still minor coverage of these provisions.

It is clear that this approach from Japan could act as an example and a first start for policy makers that do not know how to act and where to start with implementing inclusive transport . But it should be reminded that the roots for this state of art are long standing. Japan has never introduced neo- liberal ideologies, but remained to its own social policy, in which the family and solidarity related to location have important roles.

6.6 To conclude ; a wrap – up and two take away' s

6.6.1 Wrap – up : the radical approach

The radical approach (own work)

6.6.2 The take away' s for policy makers

We noticed in this book many times that policy makers are reluctant to pick up new ideas and insights. There is a feeling of not knowing what to do, and not knowing how to act, in the rather unclear situation on mobility and transport. Will IT lead to disruption in mobility systems, will electric driving safe us from full unsustainability, will automation lead to complete new vista. Will behaviour change happen?

And could we ever sustain the whole world with so much increase in transport in the developing world coming up?

Just because there is so much uncertainty policy makers could move away from taking real initiatives. Instead they develop rhetoric policies, do some management by speech and create a spectrum of short- lived pilots. This is not very helpful. Thus, I created 15 interventions that could be worked out by policy makers, who really want to make the difference in reaching inclusive transport. 8 of these interventions are more indirect, leading to a good "incubation climate" for Inclusive Transport, 7 are direct relevant for Inclusive Transport. Policy makers can be considered successful when they at least endorse and implement 8 out of the 15 interventions.

Take away 's for policy makers (own work)

Measures/Themes	Create	Clean up and abolish	Redirect
Direct			
	National law on right to mobility for everyone embedded in funding system for sufficient accessibility	Highway locations without appropriate public transport	Budgets for road infra building to public transport
	Elaborate policy framework for inclusive transport	Addiction to driving alone in your car	Budgets for public transport only to PT, car sharing, ridesharing, Mobility as a service, active modes
	Fund for start- ups on new mobility services		
Indirect			
	National law coordination car- free zones	Policy bias on economic growth in the traditional sphere	Investment budgets on infra/ mobility services from national government to urban governments
	National law on CO2 targets to be reached, plus time schedule	Focus on the technological fix, with electric cars as *the* "deus ex machina"	Taxation should be aimed to reaching sustainable mobility/ targets set for fight global warming
	Permit system related to mobility impacts of important government decisions	The last vestiges of neo- liberalism such as privatization, "there is no society" and intense flexibility	

6.6.3 The take away' s at the level of society.

Although there are great ideas, initiatives and a feeling that change is needed we are in the western societies still not on the right track when it comes to the real challenges related to mobility. There is no real policy towards sustainability, leading to accountabilities far beyond the current rhetoric, and

we still leave the transport disadvantaged with their mobility problems alone, only creating some minor policies. We are still in the vestiges of our consumption castles, backed by neo- liberal ideology. For me , this is what seems to be the situation;

Take- away ’s at the societal level (own work)

What we seem to want	*What we get*	*Where we long for*	The take away ’s
Private prosperity	Public poverty	An equilibrium between the two	Solidarity
Even more private prosperity	Unsustainability	Maintaining the Earth	Slowing down
Instant gratification	Lack of society	Social cohesion	Sharing

Most people long for an equilibrium between private and public interests, hope to remain the Earth in shape, and wish for more social cohesion in society, with more dialogue, less instant action and a more friendly atmosphere. **In essence, here we can find the source for Inclusive Transport**. Three words are central ; *slowing down, sharing and solidarity.*

But one word is even more important than these three; **trust**. When we maintain the current basic anxiety and distrust in our societies, we can forget to ever reach Inclusive Transport. The success of Inclusive Transport depends on whether we in essence will allow ourselves to trust our fellow human beings. At the end of the road, trust creates Inclusive Transport.

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