

Mobility of the elderly in the future

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Summary

In the next 20 years, due to the ageing of the population, the world will change fundamentally. In 2001 the OECD identified important issues regarding safe mobility of the elderly. The demographic changes influence mobility needs, travel behaviour and traffic safety. Governmental management practises, land use and transport and traffic facilities will have to meet quite different requirements. It will be sensible to work in that direction. Because of the extent of the changes it is urgent that action be taken now.

Discussion:

- Should we worry or will time heal the problems?
- Which demands should be made regarding the organisation of the transport and traffic system, infrastructure qualities, traffic facilities etc.?
- What should (central) government do? Are active measures needed i.e. active promotion of relocation of the elderly, the introduction of compulsory social service, a halt to growing of scale of services, harsh demands regarding transport and traffic system qualities?

1. Introduction

Policy decisions cast their shadow far ahead. Roads that are constructed now will last for more than 30 years before reconstruction is needed to comply with new requirements of that time. For land use decision the same goes, but those are even more difficult to adapt to new functionalities.

Despite this, very rarely the foreseeable future is taken into account. When designing roads the designers primarily think about coping with present day use and its problems. Even development plans have typically a practical approach: houses, shops, industry halls and traffic facilities that are needed now must be realised. The fact that society probably will be quite different in 20 to 30 years time and the fact that authorities have to deal with that, most of the times are not a weighty argument in the discussion.

We know now that ageing of the population will take place. What is also known is that the elderly will have different housing needs, necessities of life, travel needs and a different travel and traffic behaviour. It will be more difficult to meet requirements regarding the distribution of shops, social and medical services and also traffic facilities. In many cases even the presentday situation is not adequate. Because of that persons with limited mobility are forced to stay home, behind their potted plants. Vulnerable groups disproportionately are at risk in traffic.

In this discussion paper I will sketch the presentday mobility and safety situation of the elderly and important trends I see regarding their safe mobility. I hope that the discussion leads to general guide-lines for spatial distribution of activities and infrastructure. Based on these notions policy recommendations can be developed in order to develop future incessant plans.

2. OECD conclusions

In 2001 the OECD published the report 'Ageing and transport - mobility needs and safety issues'¹. Experts from many countries contributed to the study. The report summarised the State of the Art concerning this issue. The authors indicate that the following issues deserve most attention:

- Older drivers tend to be safer than is commonly believed. They have fewer reported crashes per capita or number of drivers. The most important safety concern is their frailty and consequent vulnerability to personal injury or death in a crash. Older pedestrians have higher fatality rates than younger ones; they account for nearly half of all pedestrian fatalities in many OECD European countries.
- Older people who suffer from health-related limitations must often cease walking or using public transport before they cease driving.
- In most OECD member countries, older people tend to age in place. Well planned communities facilitate ageing in place, and improved land use planning is paramount to facilitating lifelong mobility.
- The ratio of working to retired persons is decreasing and hence generating less funding to support pensions and health care programs for older adults. Governments therefore need to anticipate the mobility and safety needs of older adults.

¹ Yours truly was a member of the OECD-working party.

3. Present day situation in The Netherlands.

Transport and traffic are no goals in themselves. They are the lubricant for society. Essence is the degree of freedom to which people are able to travel². Mobility is a necessary 'evil'; however, not all trips are urgent to the same degree. If one no longer needs to go to work and one's health is no longer perfect, one will need to go outdoors less often. In figure 1 the diminishing number of trips per person per day with age is shown.

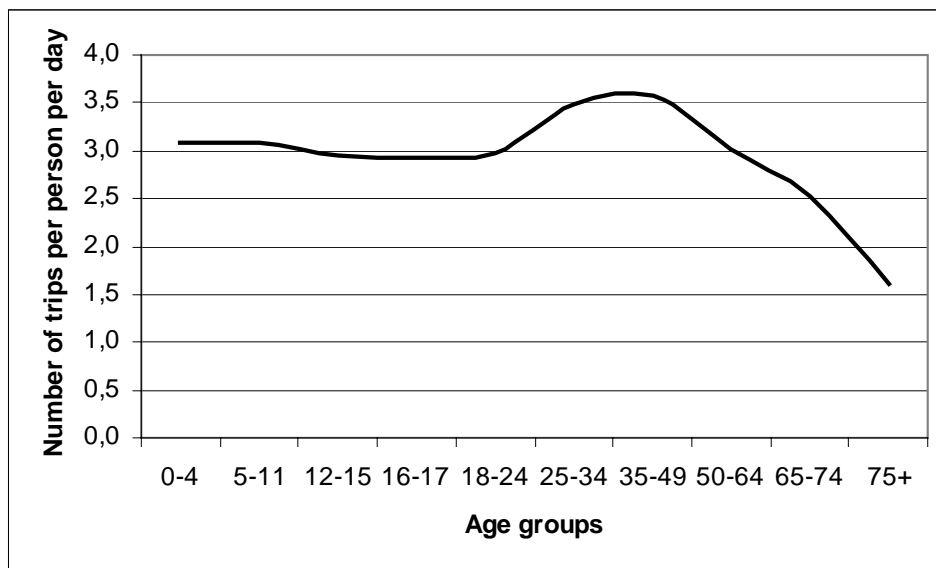


Figure 1 Number of trips per person per day in the Netherlands (2001-2003 figures)

A graph on time spent in traffic (not shown) looks more or less the same as figure 1. This appears to be inconsistent with the Law of Preservation of Traveltime (Hupkes (1977)), which states that the average time spent in traffic is rather constant, namely 75 minutes per day or 400 hours per person per year. In national travel surveys travel preparation is normally not included. Furthermore walking time is generally underreported, especially walking to and from the car and other modes. Elderly people and handicapped persons are cautious and take more time preparing their trips and spend more time walking. If one includes that they probably spent just as much time on mobility as other people (we do not have proper data on this issue). The time budget for mobility and modal choice together determine the total distance travelled. One's action radius is dominantly determined by the modal options. While one will not be able to travel far on foot, by car one can cover the whole (Dutch) country.

In the policy practise 'mobility' equals the total distance travelled or even more one sided: the total distance by car. In this perception non car users (and goods transport) come off badly. Public transport gets a lot of attention in governmental policy making, despite a small share in the number of trips and the limited potential to fill the travel needs. Of course, there are valid arguments for this attention³.

Some (Dutch) facts are:

- In The Netherlands less than 50% of the trips are made by car. The importance of car traffic is generally overestimated. The share of the two wheelers and walking in mobility seems to be underestimated. On average the elderly use cars less and walk more.

² Issue is not primarily the total travel distance, but the degree to which people are able to fulfill their essential needs.

³ Important arguments are that government plays a crucial role in providing public transport. And that public transport performs a safety net function for middle and long range trips.

- The majority of trips cover just short distances; the share of short trips rises with age;
- Almost all trips by vehicle are preceded and followed by walking; with ill health this becomes the weekes link in the chain;
- The risks of vulnerable road users are generally underestimated. In the Netherlands more than 55% of the fatalities and 75% of the injured persons are vulnerable road users.

Of course, for using a car one needs a driving license and access to a car. Driving licence rates deminish with age; rates are lower for women than men (see figure 2). The (vast) majority of the elderly are women.

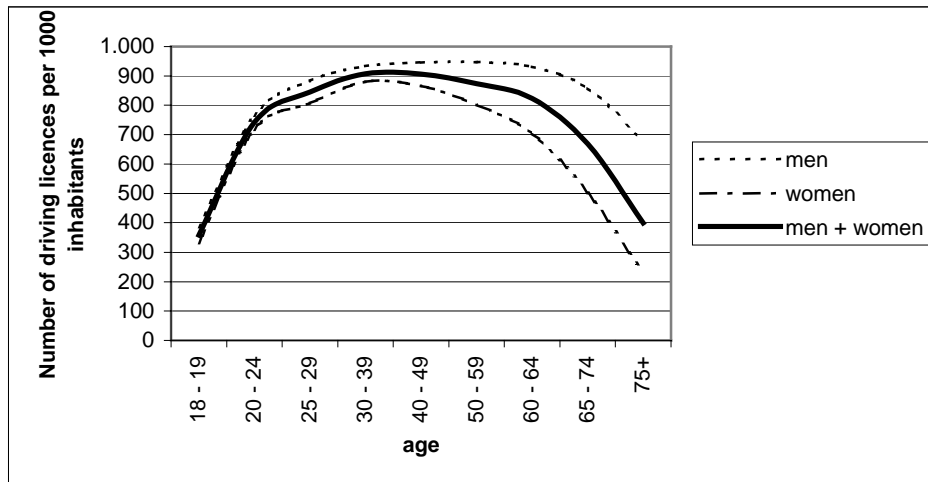


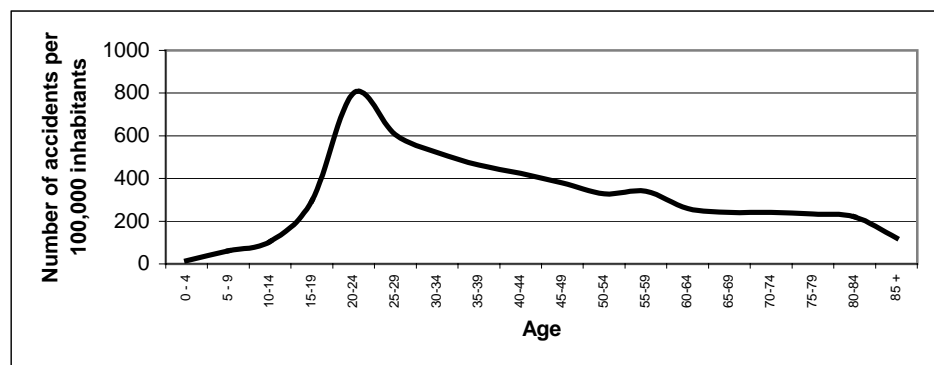
Figure 2 Driving license ownership

With age functional deficiencies become more apparant. From research (Rooij en Tacken, 2001) it is known that almost 50% of 60+ persons have one or more handicaps. This reflects on their trip choices. For many the action radius on foot reduces, riding a bicycle becomes too difficult and the reachability and accessibility of public transport becomes a problem and at some point of time one will be forced to surrender one's driving licence. As the OECD group concluded: it is clear that most people sooner have difficulties bicycling, walking and accessing public transport than driving a car. So, car dependency rises with age. Rooij en Tacken found that handicapped persons are less likely to own a car than the non handicapped. This relates to the fact that many of them have lower incomes and higher than average health costs. For a substantial share of the elderly car use is no option. Thus an important part of their mobility needs cannot be met ('transport poverty'). For longer trips they will have to depend on the good will and servitude of others, that do possess a car. For a periferical destination traditional public transport is no real option. Affordable demand guided collective transport however is not always available.

Transport poverty exists in practically all European countries. In America en Australia it even lead to untimely deaths. At a congress in Boston I heard a story about a man that died from hunger and exhaustion: his driving licence was revoked and because of that he was no longer able to go shopping. I heard this was no exception.

It must be stressed that we must not lump all elderly together. Some 50 year olds are quite stiff while there are also lots of utterly fit and driving competent 80+ year olds. With regard to driving fitness I assess that the number of unfit drivers below 70 years of age is very limited. Amongst 80 year olds the share of unfit drivers will probably be greater, but will definitely not be a majority. We do not have proper data about driving fitness. One reason is that tests are not valid. The situation is further obscured by the many older women that decide to stop driving before their licences may be revoked.

The OECD working group stated that the elderly are not risky but at risk. Most elderly, including 75+, appear to be very safe drivers, especially those that drive more than 3000 km yearly. Accident analyses show clearly that the elderly are not involved more in accidents than other age groups (see figure 3), but that, once involved in an accident, their chances of being killed or hospitalised are much higher (see figure 4). In total they have a relative high chance of being severely injured or killed in a road accident (see figure 5).



source: AVV, recorded road accidents 2001, 2002 and 2003

Figur 3 Aantal ongefallen (met minstens licht letsel) per 100.000 inwoners per jaar

Regarding the third issue in the OECD report, that older people tend to grow old in place, in many other countries this is guided by policy measures. Homes for the elderly, where the elderly formerly moved to a certain age, are being closed down. Moving in with their children has become an anachronism. The elderly keep living in their residences. Subsidies for adapting homes to special needs make it possible to stay where they are.

It is however striking that there is virtually no active policy regarding the locations of essential services like groceries, drugstore, family doctor, hairdresser, bank or money machine or community services. Economic forces make do that these services get upscaled out of the neighbourhoods to other, more central locations. The fact that people will become dependent on others once such services become unreachably, is still no (political) issue. Experts agree that independent mobility is crucial, especially when we ourselves and the government want the elderly to live independent as long as possible.

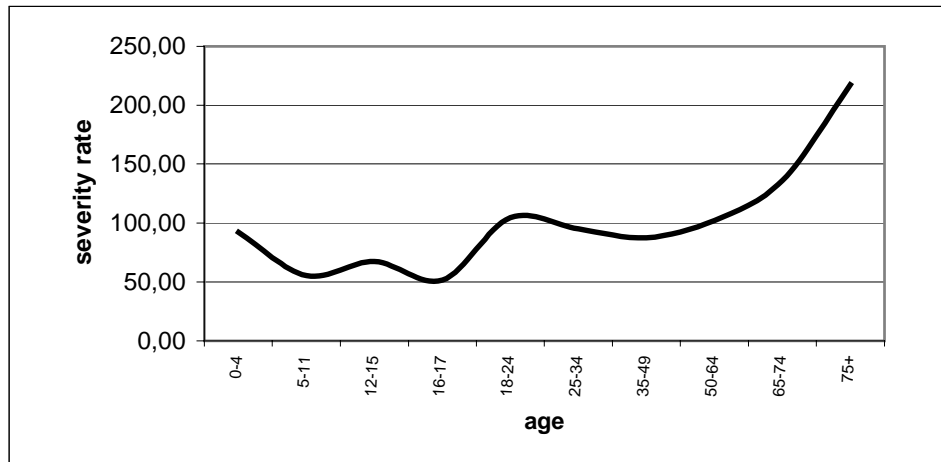
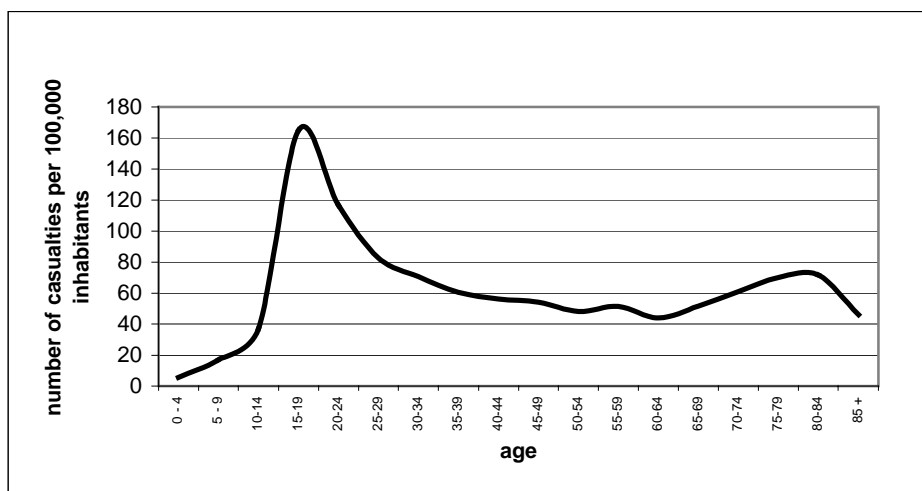


Figure 4 Severity rate (index hospitalised : killed)



source: AVV, recorded road accidents 2001, 2002 and 2003

Figure 5 Number of casualties (hospitalised + killed) per 100,000 inhabitants

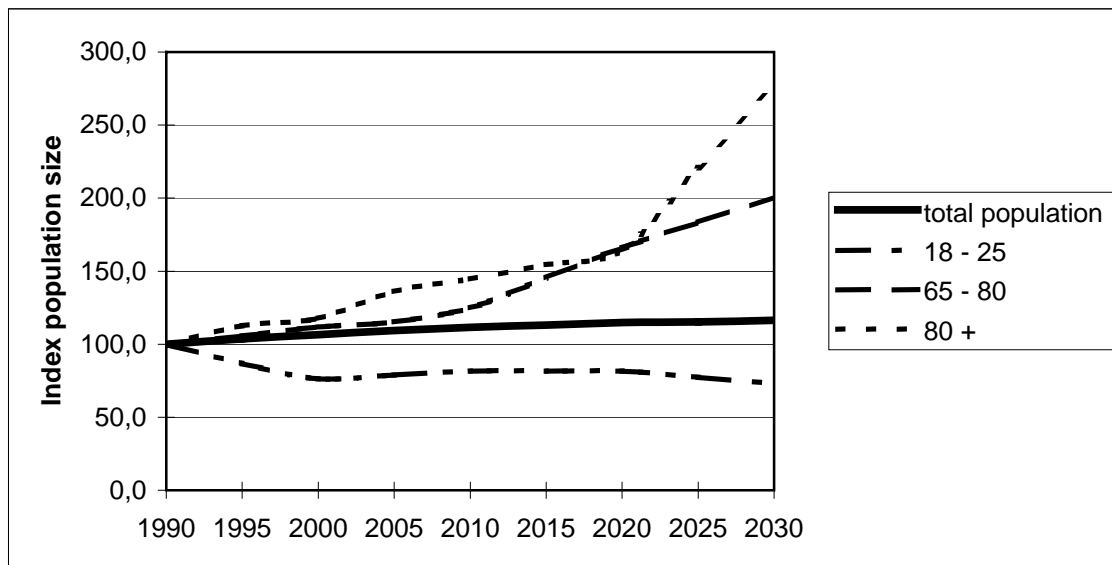
In the meantime, in The Netherlands just like in many other countries, fierce discussions arised about the affordability of the pension and health care systems (see also the 4th issue in the OECD-report). One has to bear in mind that the problem in The Netherlands and in the UK is not half as bad as it is in other countries where people did not save up for future pensions and where pensions are apportioned over the present-day tax payers.

With regard to the health care system the Dutch situation is not good. There are waiting lists for many medical procedures, a phenomenon that is unknown in most countries. The relation health – mobility – functioning of society is not recognised on the national policy level.

Although most observations of the OECD group also apply for the Dutch situation, in some instances the Dutch situation differs significantly from other countries. The Netherlands is relatively dense populated, flat, has a moderate climate and a management culture that is dominated by austerity and simplicity, and has had a restrictive land use planning policy that made our cities and vilages more compact than in most other countries. These circumstances together made it possible that the bicycle still has an important role in our transport system. Bicycle facilities, and to a lesser extent pedestrian facilities and public transport, are omnipresent and better than in most countries. This resulted in a deviant mobility and road safety profile. Some countries envy our favourable starting-point for facilitating the ageing society. It remains to be seen whether that is justified. It is true that it will be easier to cope with future developments, but the danger of 'the law of restraining advantage' and leaning backwards in self complacency is far from fictious.

4. The future

Population prognoses show that in most developed countries the total population will not rise very much. The composition however will change dramatically. Figure 6 shows the prognoses for The Netherlands: the decline in absolute numbers of the group 18-25 has already passed. Their share in the population will be approximately constant. For the group 65 – 80 year old a continuous rise is foreseen. In 2030 the group will be approximately twice as big as it is now (from 1.5 million people to 3.0 million people). Most spectacular will be the growth of the old-old. That group will grow 300%, from 0.4 million to 1.2 million people. The strongest growth will take place after 2020.



source: CBS and US Bureau of Census

Figure 6 Ageing and de-greening in The Netherlands

The changing population composition will result in new balances of power, of economy and of transport and traffic. In policy making the interests of the elderly will have a heavier weight. Businesses will act on needs of the (well to do) elderly. In traffic the risk-avoiding behaviour of the elderly will be dominant and possibly result in calmer traffic, which is good for road safety in general and for the elderly specifically.

In the last decennia in Europe the car grew to be the most important mode of passenger transport. De rising prosperity made car ownership and car use possible. The current cohort of 50- are used to high mobility. They will want to maintain their high mobility when they get older. On average the future elderly will be healthier and wealthier. It is to be expected that they will stay active longer than the current elderly. Around 2020 driving license ownership amongst women will be as high as it is amongst man, and will approach 90%. A larger share of them will own a car *and will use it*.

The downside is that society will be very much car oriented. The neighbourhood corner shop will disappear. Family doctors will go together in health centres. The number of drugstores and pharmacies will decline. Banks or even money machines will disappear from the neighbourhood. A central location of a health centre in a town is, because of parking problems, more of a disadvantage than an advantage. The future elderly will perhaps have a better pension, but their expenses will be (much) higher as well. They will no longer be able to reach essential services free of costs (on foot or by bicycle). For most jobs in and around the house it will no longer be easy to fall back on family, friends and neighbours. Paid help, if available at all, will be very costly. In the the elderly's perception social security will be more of a problem. This will be a result of the substantial decline of the average number of

persons per home from approximately 2.3 in 2000 to less than 1.8 in 2030. This will mean that less people are to be seen walking on the streets, so less 'eyes' guarding public spaces. Maintaining the present level of surveillance will be very difficult.

Travel needs and travel choices will change. In particular criss-cross traveling will be the dominant travel pattern. The elderly will predominantly live in the suburbs. Their family and friends will also live in predominantly in suburbs. Destinations will be less close to the city centres. Public transport will not be able to comply. Only the car fits their needs.

From provisional travel survey data 2004 in The Netherlands we know that approximately 14% of our inhabitants have limited mobility because of an handicap. I have not found comparable figures for other countries, but I presume that in there the share will be approximately the same. It is to be expected that this share will rise to 21% in 2030 (see table 1).

As stated above, people with limited mobility on average are poorer than those that do not have a handicap. It remains to be seen whether the negative effects of transport poverty will be neutralised because businesses will react to their needs. Political pressure by the elderly who fear their dependence on others and elderly moving home more close to the essential services may be the best bets.

In densely populated countries and subregions at this moment the mobility and safety problem of the elderly is limited. In compact cities and villages there still is enough support for services within walking or cycling distances. This however will change rapidly. In the countryside in some instances the situation is already alarming. Because of the ageing of the population not only the number of persons with limited mobility goes up, but also the need for accessible (health) care facilities rises. The catchment area for daily needs services however also grows, because of the rise in

Table 1 Prognosis of number of people with limited mobility⁴

Agegroups	2005	2010	2015	2020	2025	2030
% people with limited mobility	14,0	14,5	15,8	17,0	19,1	21,0
Number younger than 65	680.000	700.000	710.000	720.000	720.000	730.000
Number 65 - 79 jr	1.130.000	1.230.000	1.430.000	1.630.000	1.800.000	1.970.000
Number 80+	460.000	490.000	530.000	560.000	750.000	950.000

source: Mobiliteitsonderzoek Nederland (MON 2004) and assessments based on Rooij en Tacken.

one person households. Most people keep on living where they once settled, in the suburbs and villages. There gradually and unnoticed depopulation takes place. At a certain moment there is not enough population to support a neighbourhood supermarket, drugstore or hairdresser. The neighbourhood shopping centre will be forced to close down. The neighbourhood population will be obliged to go to a centre farther away. This can no longer be covered on foot or by bike. There will not be enough customers for a public transport service. A taxi is too costly. Falling back on family and friends? Even this will hardly be an option: there are less children to fall back on; to keep society running they have to work more and longer hours. Increasing car dependency will be a fact.

⁴ Assumption in this prognosis is that the share of people with limited mobility within a group does not change; Rooij and Tacken (2001) estimate that 70% of the people with limited mobility are 60 year or older. This means that approximately 50% of the people older than 60 have limited mobility; for the group 80+ the share will be in the order of 80%.

In the Netherlands it is predicted that mobility, in terms of covered distances, will rise 20% in the next 20 years (Methorst and Van Raamsdonk, 2003). In the same period the number of 65+ will double. Goods transport will grow disproportionately, some 100%. More cars, more lorries and vans, more vulnerable people. Crossing the street may become very difficult indeed...

Of course not everything will go badly. History taught us that many problems were solved on their own accord. Many of the less positive trends can be seen as a challenge. People are inventive and resourceful. Thus an elderly lady that had to give up her driving license will find alternative modes of travel, like the electric scooter, a slow 'car' that can be driven without a driving license⁵ or she may communicate by way of the internet and also does her shopping that way.

The elderly spent more time at home than other groups. Hence their living environment is more important for them. They have relatively much time to trouble themselves over things that annoy them and take action. The present-day 50+ persons, the future elderly, are much more emancipated than the present generation elderly. They want to bent things their way. They will not accept hazards and risks caused by reckless youngsters. They will demand that shopkeepers deliver at home. They will roam the internet to fill their needs as complete and cheap as possible. They will organise services-to-one-another and closed purse care projects. This is why some people think that the ageing of the population may be a blessing in disguise.

Some (local) authorities already plan for the future by concentrating shops, health care and administrative services *and* modern living units for the elderly on attractive locations reachable by public transport.

5. Discussion

Ageing of the population results in a landslide in the distribution of interests, in land use requirements, and in requirements regarding infrastructure and traffic facilities. The year 2030 seems far away, but changes will be so vast that they can not be balances in the last couple of years, when money will be tight.

- Should we worry or will time heal the problems?
- Which demands should be made regarding the organisation of the transport and traffic system, infrastructure qualities, traffic facilities etc.?
- What should (central) government do? Are active measures needed i.e. active promotion of relocation of the elderly, the introduction of compulsory social service, a halt to growing of scale of services, harsh demands regarding transport and traffic system qualities?

⁵ These modes are far from safe for themselves and for other road users. For the individuals mobility may be more important than road safety.

References

- Beek, P. van en J. Perdok, *Wonen en verplaatsen van toekomstige ouderen*, Muconsult, Amersfoort, 2001.
- Hupkes, G., *Gasgeven of afremmen- toekomstscenario's voor ons vervoerssysteem*, Kluwer, Deventer/Antwerpen, 1977.
- Methorst, R., *Kwetsbare verkeersdeelnemers – rapportage over de kennisbasis voor een effectief beleid voor een veilige mobiliteit van kwetsbare verkeersdeelnemers*, Adviesdienst Verkeer en Vervoer, Rotterdam, 2003.
- Methorst, R. en D. Hillen, *Bouwstenen voor toekomstige bestemmingsplannen*, In: Bijdragenbundel Colloquium Vervoersplanologisch Speurwerk 2004, Rotterdam, 2004.
- Methorst, R. en M. van Raamsdonk, *Ontwikkelingen in de verkeersveiligheid tussen 2010 en 2020*, Adviesdienst Verkeer en Vervoer, Rotterdam, 2003.
- Rooij; R. en M. Tacken, *Beperkte Mobiliteitsbehoefte?- Verkenning naar de vervoersbehoefte van mensen met beperkingen en handicaps*, TU Delft - Faculteit bouwkunde, Delft, 2001
- OECD, *Ageing and Transport – mobility needs and safety issues*, OECD, Paris, 2001.