

School concentration and travel: the case of the Netherlands

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Abstract

School travel is a severely neglected travel motive in transport planning. It accounts for a good part of bicycle and public transport movements. Unfortunately independent school travel is gradually decreasing and car use, especially as a passenger, is increasing. This is shown in Dutch data and incidentally in foreign ones.

School travel should be at the core of sustainable transport policies for several reasons. The most important reason is without doubt the educational value: developing the ability to travel by non-motorised and collective means of transport.

To enhance sustainable school travel it is need to analyse the causes of adverse developments. The most important cause is growing travel distances, which are leading to increasingly motorised travel. This is the result of various influences: the creation of larger institutions, (re)location decisions and changing tastes in type and social climate of schools. The Dutch evidence concerning institutional development is presented.

There certainly are efforts to turn the tide. The national council for education is pleading for the downscaling of institutions to improve social control (i.e. to reduce outbursts of violence). Institutions for secondary and higher education are being located more often at railway stations. Traffic safety organisations seek to ban the dangerous moped and they are campaigning for walking and cycling to school. Especially the walking campaigns are common all over Europe.

There is a need for a more coherent sustainable school transport policy. It should be rooted in urban planning and transport planning, but an elaboration in day-to-day school operations is essential too.

Introduction

OUTLINE

School transport is a little studied travel motive. Yet it is important from the point of view of sustainability. Sustainable travel modes are still important in this market segment, which makes it strategically important for sustainable transport: what is learned in youth is likely to still be applied during old age.

In this paper the development of school transport is analysed, looking at three successive topics:

- the concentration of schools, causing larger travel distances,
- the development of school travel with respect to distance and travel mode,
- the energy implications of these developments.

Initiatives to counter detrimental developments and impacts are summarised. These are, no doubt, insufficient to turn the tide.

Ideas concerning a planning environment and the general content of a coherent sustainable school transport policy conclude the paper.

ON THE NEGLECT OF EDUCATIONAL TRAVEL

School transport, or rather travel for educational purposes, is a travel motive neglected in transport science. It is regarded as dull, predictable and non-problematic with regard to congestion and the environment. Only one topic in this field receives abundant attention: traffic safety of (pedestrian) school routes. Especially in American sources some attention is paid to the organisation of school-bus transport. A fairly recent US report suggests its integration with public transport, which would be a revolution, abolishing perhaps the most common icon of US society (Multisystems Inc., 1999). It might make real sense: in several European countries pupil transport is the backbone of rural public transport.

One hardly finds references to school transport in general transport policy documents. The ambitious Dutch 'Second National Transport Plan' of 1989 did not dedicate any of its long list of initiatives to the subject, although one of the supporting documents treated the subject on request of the Project bureau preparing the plan (de Boer and Huizer, 1987). The much less ambitious third national plan of 2004, called 'Nota Mobiliteit' (Mobility Policy Document) only remarks that students constitute a quarter of the passengers in regional public transport (Ministerie van Verkeer en Waterstaat, 2004). The older Belgian 'Mobiliteitsplan Vlaanderen' (2001) proclaims the production of school transport plans (Ministerie van de Vlaamse Gemeenschap, 2001).

ON THE IMPORTANCE OF EDUCATIONAL TRAVEL

School travel is a transport motive which deserves more attention and for various reasons. It is important because of its volume and because of its educational value. It is worrying because of an increase in individual motorisation, which is threatening, for both traffic safety and sustainability.

Travel for educational reasons is an important motive for youngsters, simply because they have to go to school, from age 6 to 16 at least. In most countries compulsory education starts earlier and ends later; in The Netherlands at age 5 and 18 respectively.

There is a tendency for extended participation in schooling. In The Netherlands children at the age of four are admitted to school and quite a few of these continue with tertiary education well into their twenties. In fact even younger children are made mobile, by taking them more and more to day-care facilities and kindergartens, allowing both parents with the opportunity to engage in paid labour.

Travel for educational purposes has an educational value itself. In modern times, with private (speeding) cars everywhere, even playing on neighbourhood streets is not always possible. The journey to school has become a continuous exercise in travelling more independently, with gradually faster types of transport. In the most important age category (children under twelve years old) school travel is the dominant travel motive (46% in km/year) and bicycles are used more frequently for school travel than for any other motive: 43% for school journeys, as compared to 31% for leisure and sports (data 2001, Van der Houwen et al., p.17).

If new generations get the opportunity to cycle and to use public transport in a natural, functional way (i.e. cycling to primary school and, if necessary, using public transport to secondary school), the use of these transport modes may be

lasting. Of course this will be only the case if these modes are sufficiently good!

REASONS TO WORRY – THE AMERICAN PRESENCE AS OUR FUTURE?

We may note worrying developments though: educational units are becoming larger, travel distances to schools are growing and sustainable transport modes are used less and less.

A recent American report by the Environmental Protection Agency seems to be the first to describe general developments in school transport. It is a story of a spectacular decrease in the number of schools and an equally spectacular increase in motorised transport to school.

After World War II, the number of primary and secondary schools was reduced by 70%. The average school size has grown from 127 to 653 pupils. In 1969, 48% of all students walked or biked to school, in 2001 only 16% remained. Even children living close to school (less than a mile distance) often use motorised transport. In 1969 90% of those younger than sixteen walked or biked, in 2001 only 31%.

In Santa Rosa (Ca) the number of cars on the road between 7.15 a.m. and 8.15 a.m. is estimated to jump 30% during school year! (Ewing and Greene, pp. 2, 3).

In the USA the number of children killed every year by motor-vehicle accidents on the road to and from school is about 800. The school bus makes only a minor contribution (Committee on School Transportation Safety, p.1).

School concentration as a potential cause of larger travel distances and the decline of sustainable travel modes

INTRODUCTION

In the United States school closures and related school relocations were a primary cause for the decline of cycling and walking to school, but evidently not the only cause. Traffic conditions and parents' concern about safety must have been important factors. These were not documented though.

In this section we will analyse the different kinds of school concentration taking place in the Netherlands. The analysis is essential for understanding both the causes of increasing distances and the slow adaptation of school travel, as treated in the next section.

After a simple presentation of figures, four factors or rather policy levels that have an impact on school size and school travel distance, are treated. A before and after analysis of 42 intended primary school closures illustrates the relevance of the different levels.

DEVELOPMENTS IN SCHOOL POPULATIONS AND SCHOOL NUMBERS

In The Netherlands the increasing participation in education during the nineteen-seventies created the frightening prospect of an education system consuming the entire national budget. From the eighties on, the national government tried to control expenses by creating larger units on all levels of education, from primary education to scientific ed-

Table 1. Development of the number of schools and of the school population in primary and general secondary education.

	1990/1991	2000/2001	2002/2003
Primary school pupils (x 1 000)	1 443	1 547	1 550
Primary schools	8 450	7 059	7 039
Secondary school pupils (x 1 000)	916	894	914
Secondary schools	1 768	850	692

education (de Boer and Huizer, pp 32 – 39). The analysis will be restricted to primary and secondary education.

Table 1 shows the development of the national school population in primary and general (non-vocational) secondary education (source: CBS, 2004). The number of pupils has been relatively stable since 1990, the number of schools has changed considerably. In primary education there was a considerable reduction of the number of schools during the nineties. In secondary education much larger reduction took place and is still going on.

BACKGROUNDS OF THE OBSERVED DEVELOPMENTS

The reasons for the observed developments and the geographic reality behind the figures in Table 1 will be treated in the next four sub-sections.

The school system level

The school system should comply with society's need for education. This implies that system changes will take place where and whenever the school system becomes obsolete. In recent decades quite a few changes have taken place. The discrepancy between primary and secondary education as shown in Table 1 is the result of such a system change in secondary education. It led to ongoing series of amalgamations between schools for general education and schools for basic vocational training. The reduction of the number of schools in primary education is just the result of economising by increasing the norm for the minimum number of pupils in individual schools.

The school administration level

Schools operate under the responsibility of some kind of administrative body, such as a foundation or a municipality. In the past these often controlled only one local school. This restricted professionalism in the administration. Since the range of activities and the responsibilities of schools are ever increasing, the national government is stimulating the creation of administrations governing larger numbers of schools. This in fact paves the way for the amalgamation of some of these schools. The number of school administrations in primary education has been reduced by nearly 50% since 1996: from roughly 3100 to 1600. The number of one-school-administrations declined from 975 in 2000 to 729 in 2005 (Trouw newspaper 22-02-05, p.7, citing the Ministry of Education).

The levels of the school as an institution and of its location(s)

Table 1 showed the number of schools, but not the number of locations. Amalgamations during the nineties took place at an institutional level, but did not necessarily lead to a reduction of the number of locations. Where a school had to

give up its independence it could survive as an official satellite (if the distance to the main settlement was too large) or as a 'dislocation', (because of a lack of capacity in the main building. Dislocations are not registered officially, which implies that the real location pattern of schools can be assessed only at the municipal level. Local government must develop an integrated housing plan for schools in primary and secondary education.

The city of Zwijndrecht local schools, for instance, documented in de Boer (2005) prove to have many dislocations: 6 in primary education and 5 in secondary education as compared to 13 and 2 official locations respectively. There is no intention to reduce the number of locations in primary education. Closure of three locations in secondary education is being prepared. The town has a population of 43 000.

The neighbouring regional centre of Dordrecht (110 000), in contrast, intends to reduce its number of locations to only the official ones.

These are cases with more school locations than schools. The contrary is possible too: more than one school per location. In new town quarters it is more or less a tradition to create 'school-islands', conglomerates of schools, detached or semi-detached, often with shared facilities.

The fate of 42 primary schools assessed in 1986

In 1986 large scale closures in primary education were planned by the national Ministry of Education. TU Delft was invited to assess the 'closability' from the perspective of traffic safety, i.e. the safety of the itinerary to the next school. We divided this sample into three categories: those which might be closed forthwith, those to be closed only after taking mitigating measures (maybe transport by school-bus) and those not to be closed, because mitigating measures would be too expensive. The assessments were intended to test the procedure developed by us and the results were not used in decision-making (de Boer et al. 1987).

In 2003 we returned to the 42 cases to see what happened with them. The result is presented in Figure 1. According to our assessment 9 schools would have to stay open. Indeed 10 of the original schools were still there, but mostly different ones! On the other hand less than half the locations (20) had really gone. Seven of those we thought to be necessary were still used, albeit by a new school or as a satellite/dislocation. In the latter cases this is probably the result of an amalgamation of the original school and a second one (de Regt 2004).

CONCLUSIONS

The period since 1990 shows a remarkable reduction in the number of both primary and secondary schools. In secondary education the development is continuing rapidly. In primary education it seems to have stopped, but given the pressure to create larger administrative units and the contin-

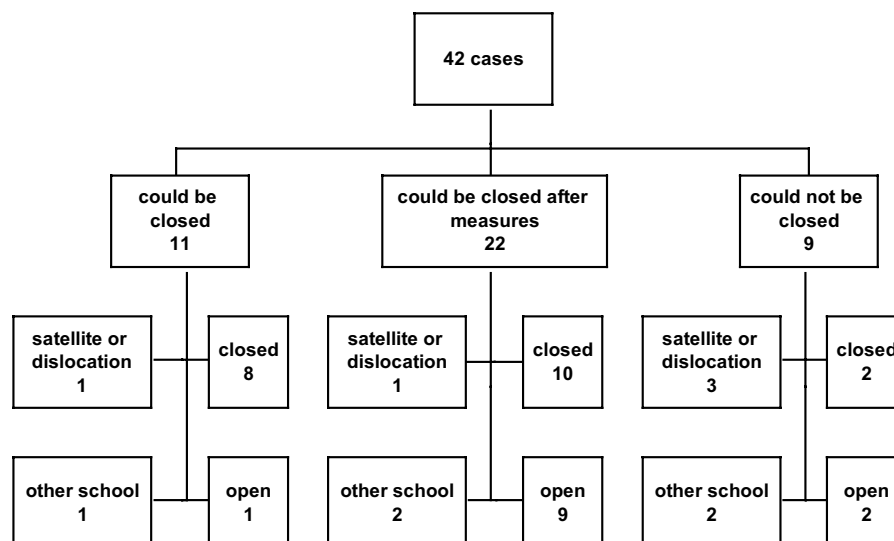


Figure 1. Assessment of potential school closures and what happened in fact.

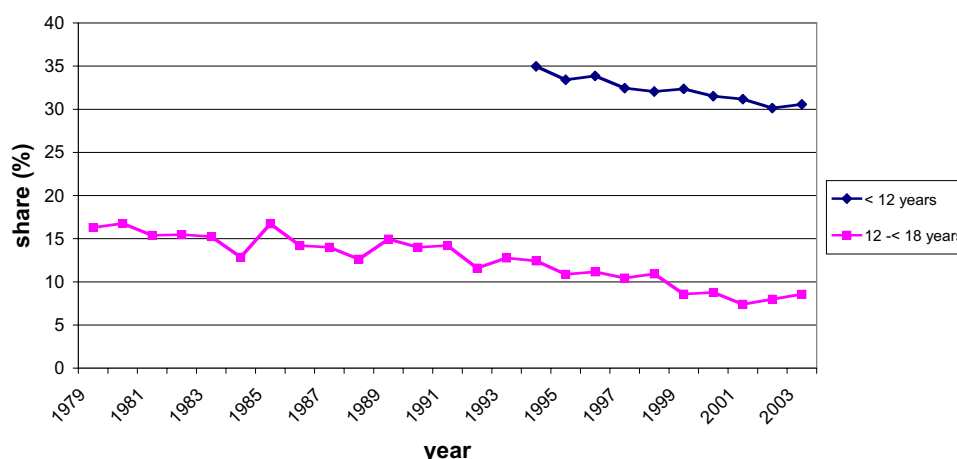


Figure 2. Share of lunch trips between home and school.

ued use of 'dislocations' without additional funds, a further reduction is likely. An analysis of school closures seems to indicate that the closure of locations is subjected to scrutiny of traffic safety. Nevertheless travel distances must be growing, which is likely to be detrimental for sustainable transport modes.

Developments in school travel behaviour in the Netherlands

INTRODUCTION

Which developments in school travel behaviour can be observed in the Netherlands? This topic is analysed using the Dutch national travel survey (OVG). This is a continuous survey of which the data are stored in annual databases. The sample size increased six-fold in 1995. Before, the annual numbers of respondents were about 25 000, from 1995 on they amounted to about 150 000. Initially, until 1993, trips of persons less than 12 years old were excluded. Therefore, the

relative increase in registered school-related trips is much higher. These increased from about 5 000 to 60 000 annually.

The developments in school travel behaviour are described separately for pupils less than 12 years old, visiting primary schools, and for pupils from 12 to 18 years old, most of them visiting secondary schools. Because of lack of data availability, the analysis of the <12 years old starts at 1994.

The analysis of this section is restricted to travel between home and school (or other educational location) and vice versa. This involves 94% of all school-related trips and 91% of the school-related trip kilometres. With respect to energy use for school transport, to be discussed in the next chapter, three factors of travel are relevant: the number of trips, the average distance and the modal choice. Energy use is positively related to the number of trips and to distance, and it is higher for motorised modes, cars in particular. Apart from the pupils themselves, the analysis includes also the trips of any people accompanying pupils under 12 years old to or from school.

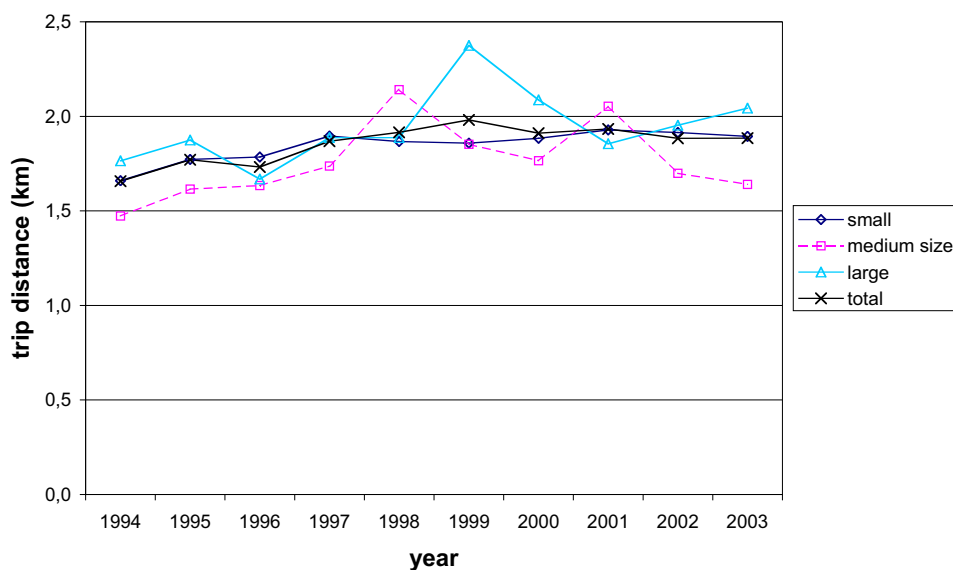


Figure 3. Average distance between home and school for pupils under 12.

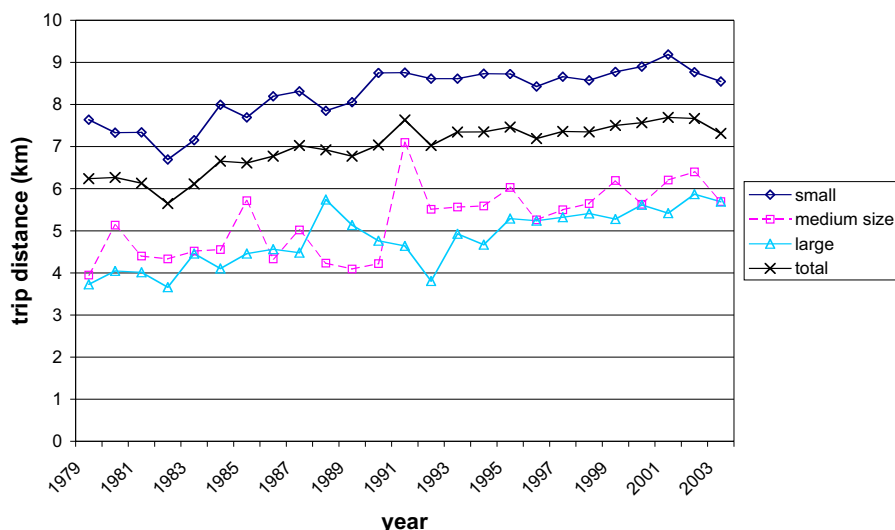


Figure 4. Average distance between home and school for pupils 12-18 years old.

DECREASING NUMBERS OF TRIPS

Pupils between 5 and 15 years old visit their school 3.5 to 4 days per week on average (holidays included). When people grow older, the number of school visits decreases. The average number of school visiting days is rather constant in time. Nevertheless, the number of trips per person per day between home and school are decreasing. The reason for this is a decreasing number of 'lunch trips' between home and school. These trips include all trips from home to school by a given person on a given day except for the first trip on this day. The decrease in lunch trips is illustrated in Figure 2. The decrease can be observed both amongst the younger and the older pupils.

The decrease in the number of trips per pupil under 12 is partly compensated by an increase in the population. On the other hand, the decrease in the number of trips made by 12-18 year-olds is amplified by a large decrease in the size of

this group. The result of both developments is no significant change in total trip number by under 12-year-olds since 1994 (about 800 mln trips annually) and a large decrease in total trip numbers made by 12-18 year-olds (from about 580 mln trips annually in the early eighties to 400 mln trips today).

INCREASING TRIP DISTANCES

The Figures 3 and 4 present the development of the average distances between home and school or other educational location for both considered age groups, divided into people living in small municipalities (<50 000 inhabitants), medium sized municipalities (50 000-100 000 inhabitants) and large municipalities (>100 000 inhabitants).

Both figures show a clear and ongoing increase in all the kinds of municipalities. The distances to primary schools tend to be smallest in medium sized municipalities, though there are no clear differences between the different types of

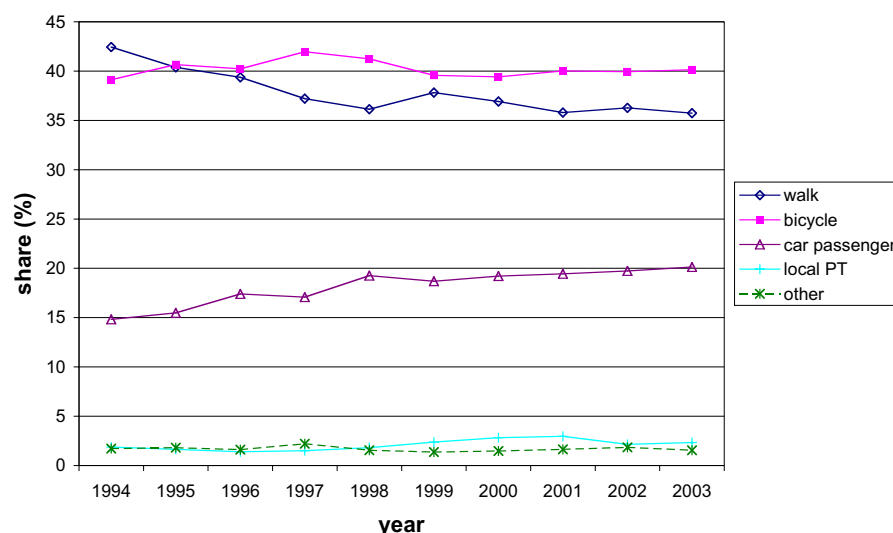


Figure 5. Modal split in home-school trips for pupils under 12.

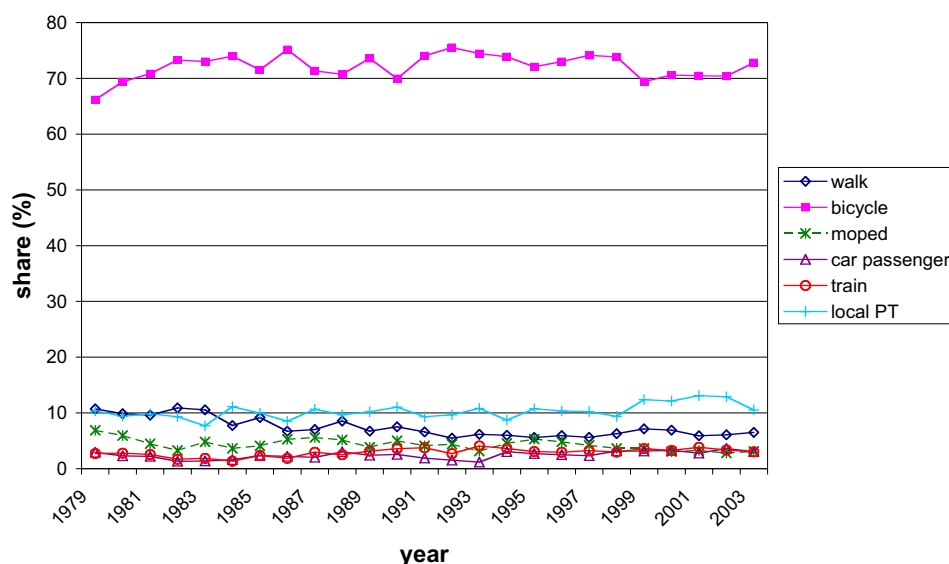


Figure 6. Modal split in home-school trips for pupils 12-18 years old.

municipalities. The increase is about 1,0% annually for all types of municipality. The distances to secondary schools are largest for people living in smaller municipalities. However, the increase in the average distance is largest for the people living in the larger municipalities. The annual increase is 0.75% in the small municipalities, 1.2% in the medium sized municipalities and 1.4% in the large cities. Comparing both graphs, one can see that the average distances to the primary school (pupils under 12) are much smaller than those to secondary schools (older pupils).

MODAL SPLIT CHANGES IN FAVOUR OF MOTORISED MODES

The Figures 5 and 6 show the modal split in home-school trips (excluding lunch trips) for both age groups.

The most important modes of travel to primary schools are walking and bicycle (Figure 5). The share of walking is decreasing. The share of car transport is steadily increasing. Inclusion of lunch trips causes a small increase in the share

of walking. A remarkable relation with the size of the municipality is a growing share of walking at the expense of cycling as the size of the municipality increases.

The bicycle is by far the most chosen mode for travelling to secondary schools (Figure 6). Moreover, its share is rather stable. The shares of walking and moped are declining, the share of local public transport seems to be increasing. Including the lunch trips would increase the share of the soft modes a little, especially the share of walking. The share of the soft modes is highest in medium sized cities, those of the car and moped are highest in the smaller municipalities. Train use is relatively low in the largest cities, while in these cities the use of bus, tram and metro is much higher than in the other municipalities. The latter is lowest in the medium sized cities.

Table 2. Modal split of the escorting persons in 1998.

	Modal split in trip numbers		Modal split in trip kilometres	
	Round trips	Through trips	Round trips	Through trips
Walk	32%	12%	10%	2%
Bicycle	45%	39%	39%	17%
Car driver	20%	42%	41%	66%
Car passenger	3%	5%	8%	9%
Other	0%	1%	2%	6%

Table 3. Development of energy use in school transport of persons < 18 years.

	Energy use per personkm (MJ/km)	Total energy use (PJ)			
		< 12 years		12 - < 18 years	
		1994	2003	1979	2003
Slow modes and car passenger	0.0	0.00	0.00	0.00	0.00
Car driver	2.7	1.62	1.76*	0.00	0.00
Train	0.5	0.00	0.00	0.19	0.22
Local public transport	0.7	0.08	0.17	0.52	0.61
Other	0.7	0.07	0.07	0.21	0.12
Total		1.77	2.00	0.91	0.95

* Figure relates to 1998 and will presumably be higher in 2003

ESCORTING PERSONS

Younger pupils often are escorted on their trips to and from school by adults, usually one of their parents. The main reasons for escorting are the child being too young to go independently to school, the lack of traffic safety, and the school being on the route to work or other address. The main reasons for escorting by car are distance, traffic safety, and travelling by car to work address (Van der Houwen et al., 2003, pp. 39 and 42). The travel survey data of the OVG are based on households and enable us to analyse the travel behaviour of the accompanying persons as long as they belong to the same household as the pupil.

Nearly all pupils under 5 years old are escorted by a parent. From those aging between 5 and 10 years, 50-55% are escorted. Of the older pupils, 10 to 11 years old, 12-15% are escorted. The average distance between home and school does not differ much between escorted and non-escorted pupils.

Parents mostly return home after bringing their children to school. However, 25-30% of the parents go on to other addresses. Most frequently (40-45%) to a shop; 20-25% to work and 10-15% to family or friends.

Table 2 gives an overview of the modal split in the escorting trips and trip kilometres in 1998. The trip kilometres refer to the whole trip chain (home-school-home for round trips and home-school-other address for through trips). The mode "car passenger" concerns parents who accompany their child together with a husband or wife who drives the car. A comparison with figures from 1995 shows a substantial increase in the share of car drivers between both years. The share increased from 17 to 20% for round trips and from 38 to 42% for through trips. The increase is mainly at the expense of the bicycle.

The bicycle is the most frequently used mode for round trips, the car is most frequently used for through trips. Additionally, walking has a large share in round trips, while bicycles have a large share in through trips too. In 1995, the

bicycle was the most frequently used mode in through trips. Since then the share of car drivers increased from 38 to 42%, while the share of bicycles decreased from 44 to 39%. A similar development is observed for round trips.

Van der Houwen et al. (2003) show a strong relation between distance to school and share of the car. The latter increases from 5% for trip distances <500 m to 40% for trip distances >2 km. The increase is mainly at the expense of the share of walking.

CONCLUSIONS

Trip distances to school are growing. This result is in line with the observed school concentration. However, the analysis gives so far no explanation about the extent the growing distances must be attributed to the concentration tendencies as against other factors. This should be assessed by further research. The other developments, decreasing number of lunch trips and modal shift to motorised modes, are second order effects of increasing trip distances. Again, other factors may play a role. For instance, the increasing participation of women in the paid labour leaves less parents home during lunchtime, implying that the pupil cannot go home for lunch.

Energy implications of the developments in school travel

The developments in energy use for school travel are determined by the development of person kilometres using motorised modes and the development in modal energy efficiencies. To find the impact of the developments in school transport on energy use, the effects of increasing energy efficiency in time should be eliminated. Therefore, we use the same figures for energy use per kilometre for the entire period considered.

The developments of the three factors underlying person kilometres by mode – trip numbers, trip distances and modal split – were explained in the previous section. In this section we will highlight the effects on the person kilometres.

The average trip length in home-school travel in the Netherlands (including lunch trips) by persons <12 years old, increased by 9% in the period 1994-2003, whereas the number of trips per person per day decreased by 8%. Because the population in the age group increased by 6%, the total effect is an increase in person kilometres travelled of 6%. Walking shows the largest decrease (35%), local public transport the largest increase (nearly 100%). Car use shows a relatively large increase too (25%) whereas bicycle use decreases a little (4%).

The average distance for pupils 12-18 years old increased by 30% in the longer period 1979-2003. The number of trips per person per day decreased by 10% in this period. The total number of kilometres decreased by 13%, due to a large decrease of the population in this age group (25%). A stable population would have travelled an increased number of kilometres. The decrease in kilometres travelled is most obvious for walking and mopeds (65 and 60%), and bicycle and car showed a larger decrease than the average as well. Ridership of public transport modes increased a little.

In order to find the effects on energy use, the kilometres by mode have to be multiplied by the mode-specific energy use per person kilometre. Figures for energy use per person kilometre are published by Feimann et al. (2000) and Uitendaal et al. (2001). These relate to the period 1995-2000. Table 3 displays these figures and the energy volumes calculated for school travel.

The energy use by the car drivers concerns the escorting persons. The car kilometres underlying the calculations relate to the complete round trips (home-school-home) and the estimated detour of through trips (for instance home-school-work). Based on a comparison of the distances of direct trips between home to work in one direction and trips via school for escorting pupils in the other direction, the average estimated detour is 25% of the direct trip distance.

The results show that there is a clear tendency to increasing energy use in school transport. The increase of 13% for the category under 12 is partly due to a population increase. Corrected for the population effect the increase is 6%, or 0.65% annually. Energy use for the 12-18 years old increase by 4%, despite a population decrease of 25%. Correcting for this decrease energy use increased by 30% or 1.1% annually.

Two comments should be made:

1. Energy use in school transport is highest in the age group of 18 years and older, not included in this study. The energy use of these students is estimated at 6.4 PJ in 2003, two thirds of all energy use in school transport.

2. A study on the energy implications of concentration of secondary schools proved that the decrease in energy use of the schools themselves (for instance for heating) might be larger than the increase in energy use for travel (Leget et al. 1994).

CONCLUSIONS

The developments in school travel behaviour led to a substantial increase in energy use. We can expect that the increase will go on in the near future, partly because one of the underlying forces, school concentration, will go on.

Countervailing actions

In the *USA* the reaction to the transport impacts of massive school closures and relocations was the expansion of the school bus network, with its peculiar vehicles. These are the result of long struggles about safety. Their most remarkable feature indeed is one safety measure: blinking lights all around to indicate that the bus is stopping and is not to be overtaken. The school bus system suffers from economising though, and worse, many pupils dislike its use and travel by car. In some states pupils as young as 14 years are allowed to drive to school by car.

A range of measures has been taken in places, but without constituting a coherent approach:

- relocating schools to urban neighbourhoods, to reduce distances and create routes which are socially acceptable. This sometimes requires changing standards for school buildings and facilities, like the minimum area for playgrounds,
- making schools more accessible for slow transport modes by creating sidewalks (often not present!) and bicycle facilities,
- controlling car traffic around schools, giving priority to carpooling (more children per vehicle),
- organising campaigns to walk to school, referring to safety and health (fighting the frightening obesity problems).

In *The Netherlands* large schools are regarded with general mistrust nowadays, because of security problems in some schools. This need not be countered by creating smaller locations, since smaller social units may be created within schools, as is done within one of the *Zwijndrecht* schools mentioned before.

In our country different campaigns were launched:

- locating secondary schools at transport nodes, especially railway stations, to provide direct access to public transport. In recent years a spectacular number of school buildings for higher and secondary education have been erected at railway stations in large cities like Amsterdam, The Hague and Rotterdam.
- anti-obesity campaigns, like the one of the city of Delft stimulating after school sports on municipal sports parks. These could be reached by bike, which in fact requires using the bike on the trip to school as well. The city will provide bike sheds to the schools.
- standardising the safety of organised school transport which is voluminous for some types of religious schools and for special schools.
- creating a safer school environment by controlling car traffic and parking, with the support of trained 'traffic parents'.

- educating and policing pupils of secondary education in using a bike or a moped on their way to school and of-fending to all kinds of traffic regulations.
- stimulating walking to school through national cam-paigns, supported by manuals and consultants of the Dutch traffic safety organisation '3VO'.

Towards a coherent strategy

The initiatives mentioned are, as a rule, separate and often incidental ones. One should develop integrated concepts for sustainable school access, taking into account energy, health, security and safety considerations.

Planning is no doubt the key for success. We will sketch an approach imaginable in Dutch circumstances and the solu-tions required for it. It concentrates on primary education as the foundation for developing sustainable transport behav-iour.

At the municipal level a number of plan types should be utilised:

The local physical plan, indicating where specific functions might be located, taking account of need, accessibility, safe-ty and environment,

The location of primary schools should be in the heart of the neighbourhood, not requiring the crossing of main roads. If crossing of a substantial number of pupils is unavoidable, the school had better be located at the road, within sight of the car drivers and provided with a protected crossing facili-ty including a traffic calming measure.

The local school housing plan, containing the real school lo-cations and the desirable changes in the foreseeable future as related to educational concepts, demographic develop-ments and (potential) problems on school itineraries.

Given the minimum size of a school as dictated by fund-ing rules and the aspired quality of a 'broad school', more than one location per school should be considered. It may prevent undesirable travel of pupils, and will imply some ex-change of specialised teachers between locations.

The local transport plan, indicating desired changes in the road network, collective transport, individual behaviour and traffic safety.

School access routes do require special attention. Wherev-er possible, protected and separate walking and cycling fa-cilities should be created. If this is not possible, main streets should be provided with parallel facilities. Ideally we should avoid confrontations with traffic with speeds greater than 30 km/h.

Parking policies tend to be controversial. One cannot for-bid parents to bring their children by car, but parking should not be too easy and carpooling (>2 children per car) should be prioritised.

The local environmental policy plan, aiming especially at re-ducing energy use and pollution.

A harmonisation of these plans may create a good founda-tion for an operational school transport policy. It can only be successful with the support of schools, teachers and parents.

The school itself should develop a *strategy for a safe and healthy school journey*, promoting physical exercise amongst the pupils on the one hand and an active attitude towards the safety of children and parents on the other hand. It may

'steer' traffic behaviour in the direct school environment (as-sisted by 'traffic parents') and promote collective walking and cycling in 'buses'.

It may relieve the families of some of their concern about the transport and safety of their children.

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