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(Auto) Mobility in the Conurbation

Is Mobility dominated by the car?

Werner Brög

Erhard Erl

Socialdata

Institut für Verkehrs- und Infrastrukturforschung GmbH
Hans-Grässel-Weg 1

81375 München

Telefon: 089 / 71 08 - 1
Telefax: 089 / 71 64 20
E-Mail: socialdata@socialdata.de

Abstract

The relationship between land use and travel patterns has been addressed for a long time. An almost universal conclusion is that less dense urban structures promote car ownership and that, seen the other way; increased car ownership is leading to different land-use patterns. That such mutual cause and effect have truly been at play during the last few decades is undisputed. However, whether this change is natural and unavoidable, or whether the development of alternative settlement forms is possible, is open to question.

Hence one usually speaks of the relationship between changed settlement patterns and changed transport systems. However, this generalisation often overlooks the significance in conurbations of travel over short distances – in which case a number of alternatives to the car exist. Over very short distances walking and cycling are very serious options and over greater distances both public transport and more sensible forms of car use or intermodel transport are possibilities. The increasing domination of the car is strengthened and visualised by the change in land use patterns, and it is precisely this reason that causes infrastructural solutions are being sought.

Approaches that envisage alternative forms of behaviour, while accepting existing settlement forms, have little place in current expert thinking. Transport professionals and decision makers are much more likely to speak of the unavoidable pressure to improve the situation for the car driver.

Approaches on the other hand that seek to reduce reliance on the car by broadening the transport options open to the public are generally very sceptically viewed by the experts. However, by looking at examples of projects from a broad range of countries we can see where “soft” policies have reduced the proportion of car use. Indeed, it was exactly in a conurbation seemingly designed to maximise car use - Perth in Western Australia – that this approach was for the first time truly successful. Further examples show however that such success is not peculiarly Australian and that the key is treating the citizen as a partner, appealing to his sense of responsibility and motivating him to make his contribution. Many small changes of behaviour can, taken together, have a very large-scale effect.

It is however also clear that traffic is a result of the specific needs of individuals, and it is not automatic that a car is required every time. By transmitting this message, one can also promote settlement and land use patterns which do not depend solely on the car.

1 Key Mobility Statistics in Central and Peripheral Areas

Socialdata carried out transport research in a series of German regions, producing mobility statistics for residents of both central and peripheral areas. Individual areas were grouped in the categories “region” or “centre”, allowing totals to be calculated and compared.

Survey Areas Centres and Regions		
Aachen	Freiburg	Nürnberg
Chemnitz	Hamburg	Rostock
Cottbus	Karlsruhe	Saarbrücken
Düsseldorf	Kassel	Schwerin
	Leipzig	

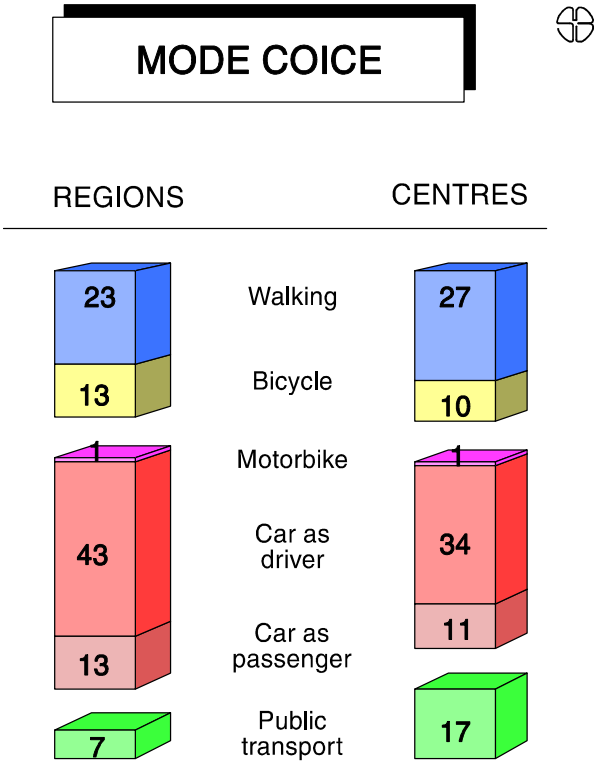
This research outlined everyday mobility in these areas and highlighted the role of the car, allowing the question to be asked of whether this private car use was really vital and, therefore, what possibilities existed for reducing reliance on the car.

Everyday mobility was next examined in terms of a broad range of mobility statistics.

The population’s choice of method of transport is a key factor in the study of transport behaviour and is the first thing which we look at here in detail.

In total, in regions, people made almost a quarter (23%) of all journeys by foot, an eighth (13%) by bicycle and over half (56%) by car – whether as driver (43%) or passenger (13%). Public transport was used in 7% of cases.

In centres, the proportion of non-motorised journeys is virtually the same, although more journeys are made by foot as in regions. However, the share of public transport (17%) is considerably higher. Consequently – the use of private motorised transport (as driver or passenger of car or motorbike) is lower, with car use reaching 45% compared with 56% in the region.



The choice of transport in regions is marked by more reliance on private cars and less on public transport.

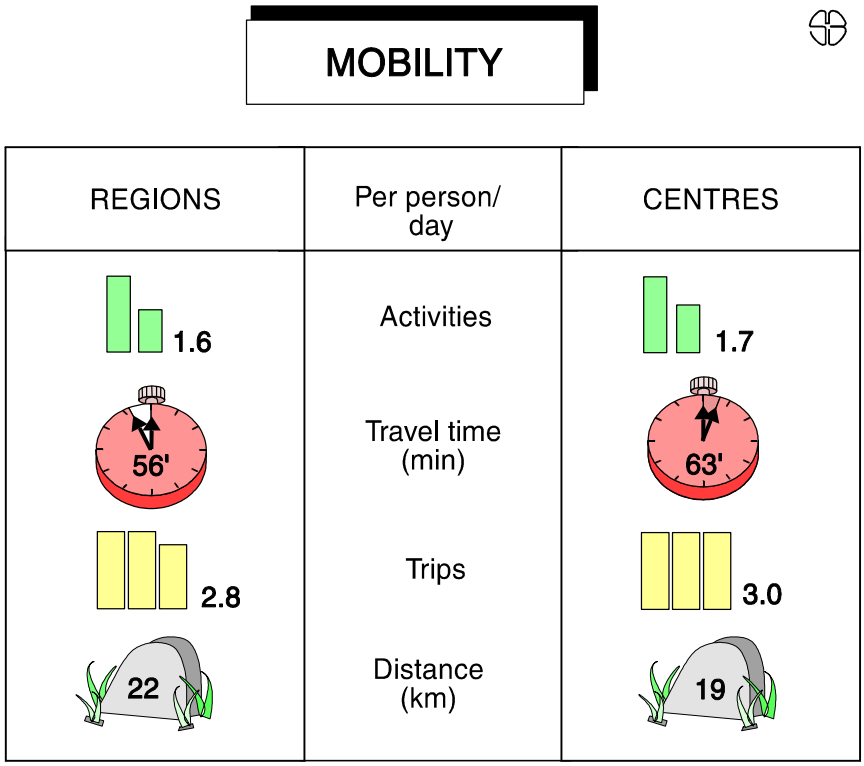
Activities outside the home are the prime cause of mobility, establishing the daily routine and explaining why people are underway. These activities come in five groups (Work, Education, Services, Leisure, Other).

Each fifth journey of the regional dweller has to do with work and every tenth with education. The highest number of journeys relates to services (shopping and other service activities – post office visits etc – 30%) and leisure (29%).

For the city dweller the statistics are more or less identical, with an equal distribution of journeys amongst regular activities (work and education), services and leisure.

Hence the activities causing journeys are similarly distributed in centres and regions.

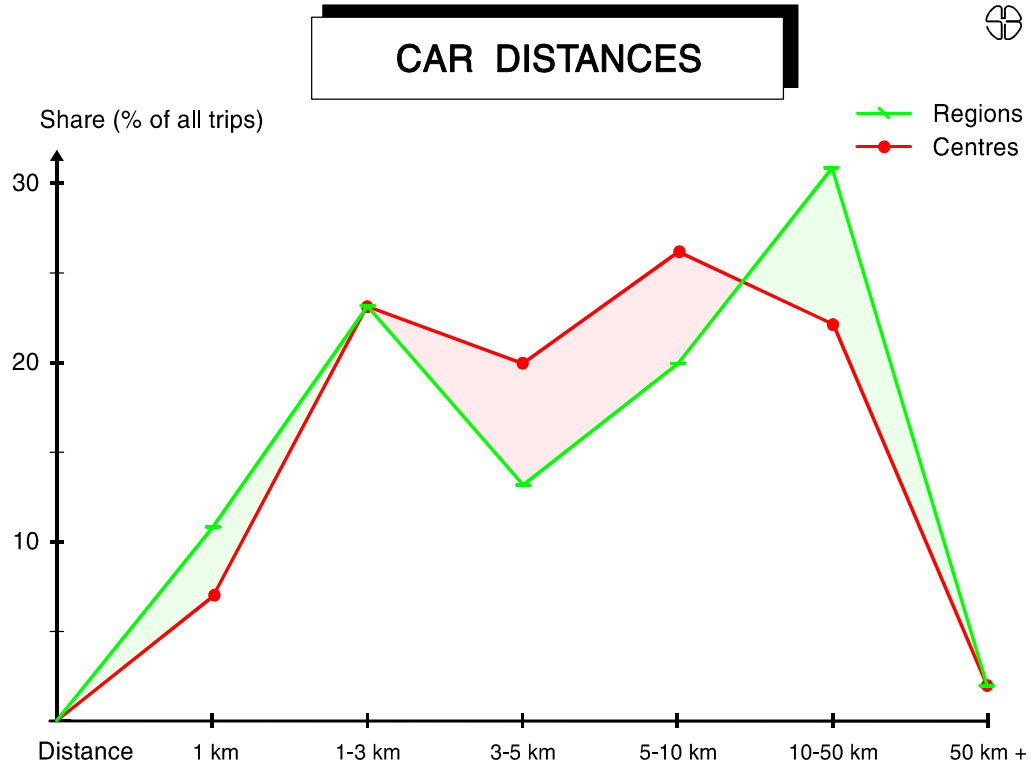
Other key mobility statistics involve the number of activities and journeys per person per day, journey times and travel distances. Here we present the key values for private everyday mobility (ignoring commercial transport, holiday travel and journeys over 100km).



On an average day, the average citizen carries out 1.6 activities, requiring 2.8 journeys and a total journey time of 56 minutes in which 22 kilometres are travelled.

In cities mobility is slightly increased (with longer travel times and more journeys), although the distance travelled is less.

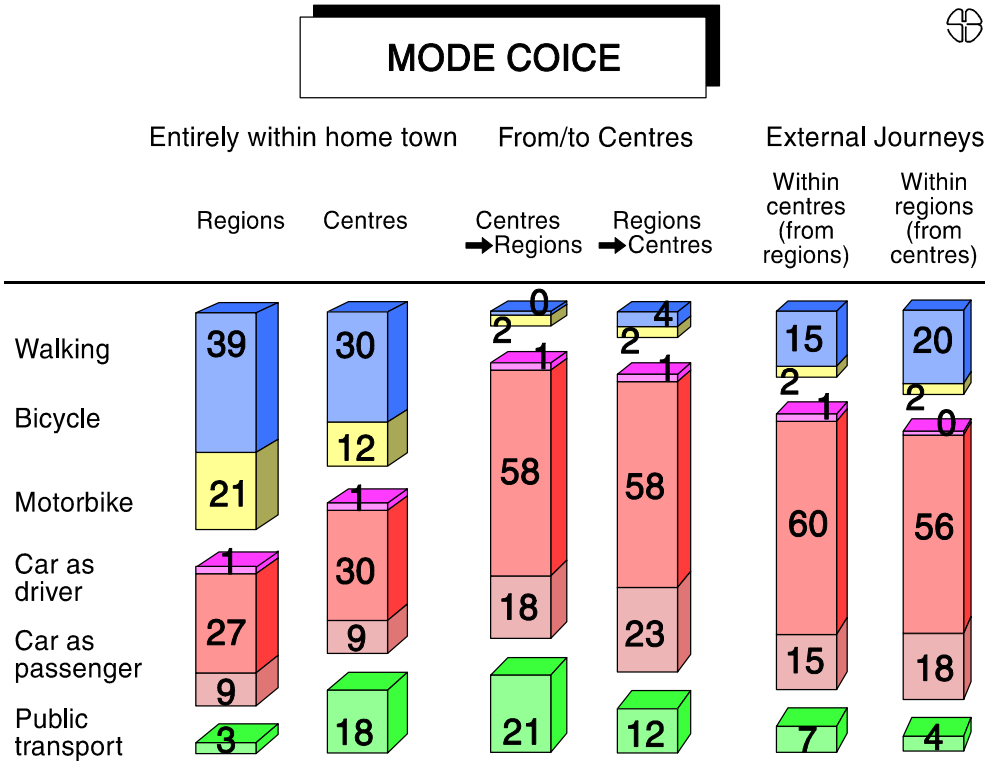
A consideration of travel distances by car creates the following picture. Around 10% of car journeys are no longer than a kilometre, around a quarter are between one and three kilometres. These statistics are true both in centres and in regions. However, for journeys over three kilometres, the figures for centres and regions vary. In regions, the proportion of journeys between three and five kilometres is around 15% but in centres this is 20%, and for journeys between five and ten kilometres the situation is similar, with this distance accounting for 20% of journeys in regions and 25% in centres. For journeys of between 10 and 50 kilometres, however, the picture is reversed, with the 30% of such journeys in regions being significantly higher than the 20% in centres. The proportion of journeys over 50 kilometres in both areas is very low.



Most of the research carried out so far has shown that the majority of car journeys are of less than five kilometres. In both areas 50% of journeys have been completed within five kilometres. In regions the proportion of longer car journeys is higher however, principally due to the less dense settlement structure.

In looking at transport use in both regions and centres it is instructive to examine both the types of journeys, and the choices of method used to make those journeys.

In doing so, it is possible to distinguish between three key types of journeys: “Internal Journeys”, which are carried out entirely within the traveller’s city or settlement; journeys between centres and regions or vice versa and “external journeys” - the journeys of the city dweller exclusively in the region or of the region dweller exclusively in the city.



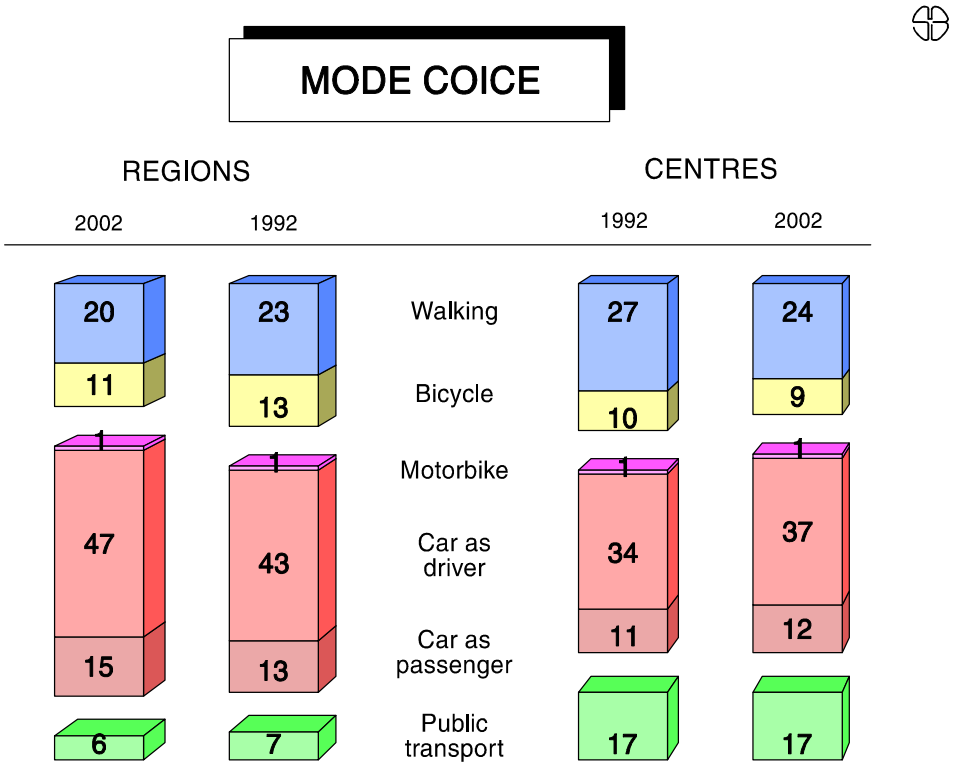
Around two thirds of internal journeys in the regions are made by foot (39%) or bicycle (21%), with public transport playing an almost insignificant role (3%), whereas in the centres it is very significant (18%). Here, the choice of foot or bicycle (30%, 12%) is lower. However, the car is equally significant in both areas (regions – 36%, centres – 39%).

The choice of transport method between centres and regions and vice versa is very different. Here, 58% of journeys are made by car and 20% by public transport. Journeys by foot and bicycle are more or less insignificant.

“External Journeys” are also extensively made by car (74%, 75%) in both categories.

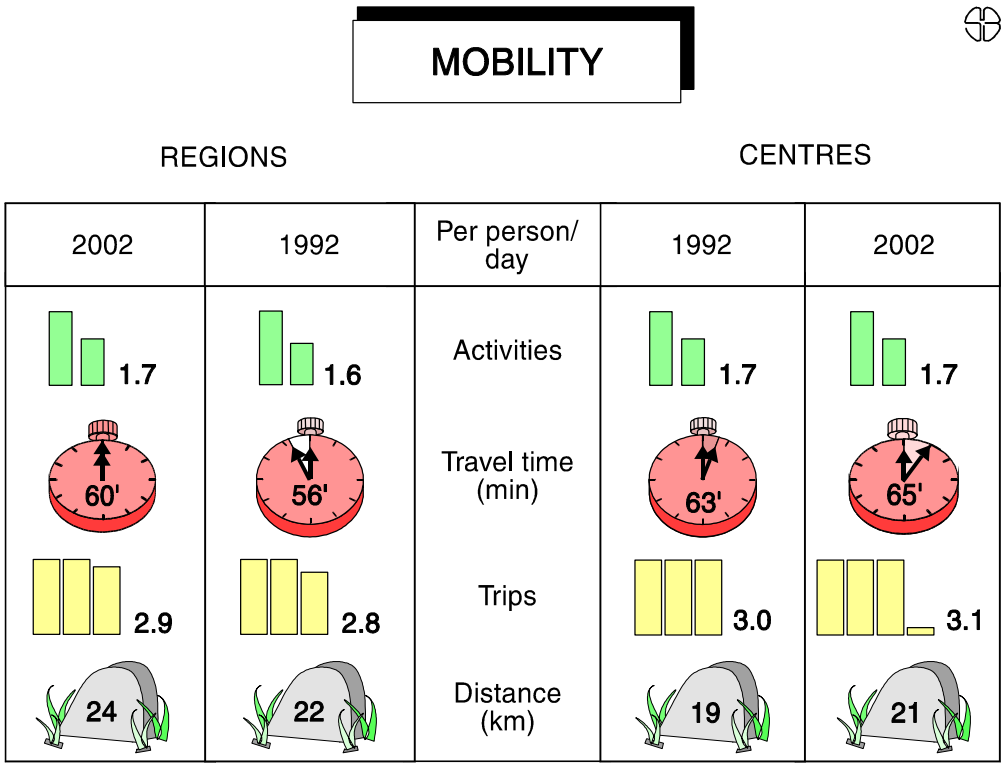
This analysis makes it clear that the choice of transport method is heavily influenced by the sort of journey which is to be undertaken but that car use in centres and regions is fairly similar.

In the past decade, car ownership has steadily increased and the effect of this on mobility patterns can be seen by comparing transport data for the period 1992-2002.



The development of modal choice shows that in both centres and regions, motorised private transport has increased between 1992 and 2002. This increase was mostly at the expense of journeys by foot and bicycle and, in regions, at the expense of public transport. In centres however, public transport has retained its importance. In 1992 journeys by foot already played a less significant role in cities than in regions and in the years to 2002, this tendency increased in both areas as car use increased.

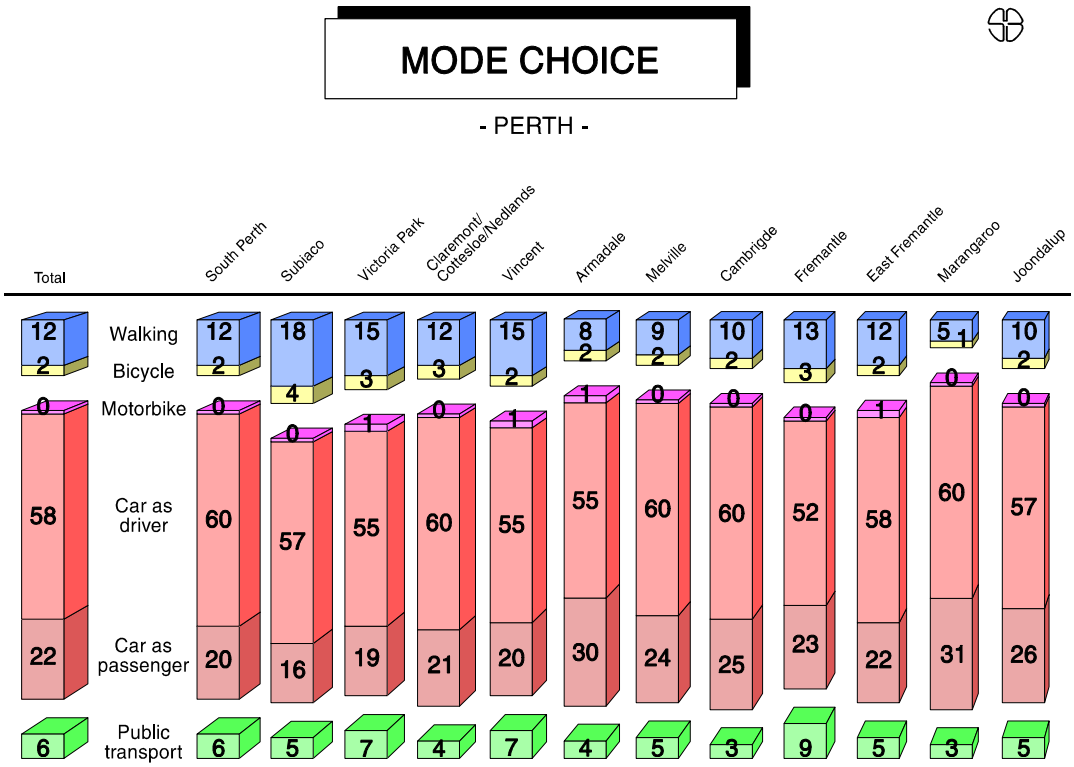
Mobility itself, however, has in both areas changed very little in this time. In both areas travel times and distances increased as, very slightly, did the number of journeys. The number of activities only increased very slightly in the regions.



The causes of mobility remain therefore largely unchanged, whereas travel time and distance have changed in a reflection of the changed modal split.

2 *Mobility in Perth, Australia*

Extensive transport research has also been carried out in Perth in Australia. As a result of generous land availability and the resulting low density settlement pattern, Perth is a strongly car-oriented city. This can be seen in the following table of mobility types in various parts of the city.



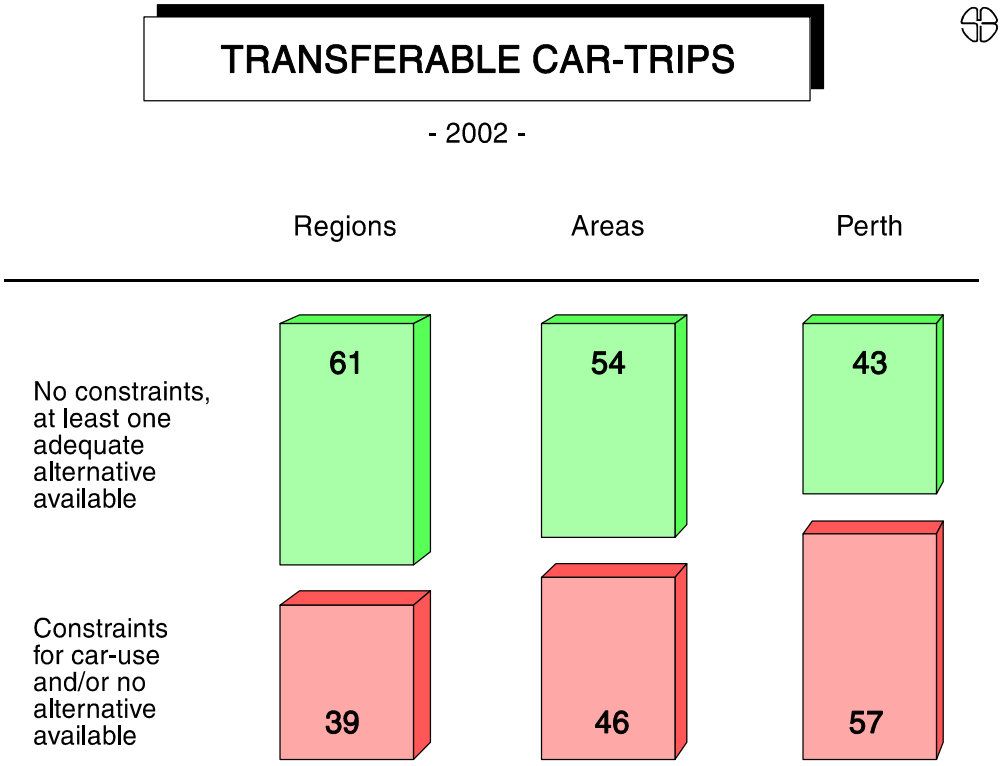
In comparison with Germany, far more journeys here are made by car. The percentage is around twice as high (80%) and the percentages for journeys by foot and bicycle is half of that in Germany. The share of public transport is similar to that in the German regions. Between various parts of the city there are few differences, regardless of the distance to the centre. In all parts of the city the private car is the most common form of transport.

However, regardless of this, the western Australian transport ministry has developed an integrated transport programme (“TravelSmart“), aimed at motivating the population to make less use of their cars. A first pilot scheme (1997) was so successful, bringing a sustainable reduction in car use and numerous economic benefits, that it has been in place ever since and now covers half of the city (with its population of 650,000 inhabitants).

3 Potential for Change

Citizens are increasingly critical of increasing traffic, finding its negative effects ever more of a burden. This is not just the case with city dwellers, but also with those in the regions. A key possibility is the transfer of more car journeys to other means of transport.

Research shows great potential in both types of area to transfer car journeys to other means of transport. In 39% of centre journeys there is a professional reason for the choice of the car (transporting a load, professional necessity, etc) or there is no alternative means of transport available. This means however that in 61% of cases the use of another method of transport would be theoretically possible and only does not occur for subjective reasons. In the regions, over half of car journeys (54%) happen for exclusively subjective reasons. In car-dominated Perth, the percentage of such journeys which could be switched is also nearly half (43%).



4 "Soft Policies" for Changing Behaviour

Already today, without improving the present service offering, public transport, pedestrian and bicycle journeys could replace a considerable number of car journeys in the areas under research. If only each car user were to switch two journeys per week to environmentally friendlier means of transport, car use could be reduced by approximately 25%. Minimal (individual) changes in behaviour can have huge effects.

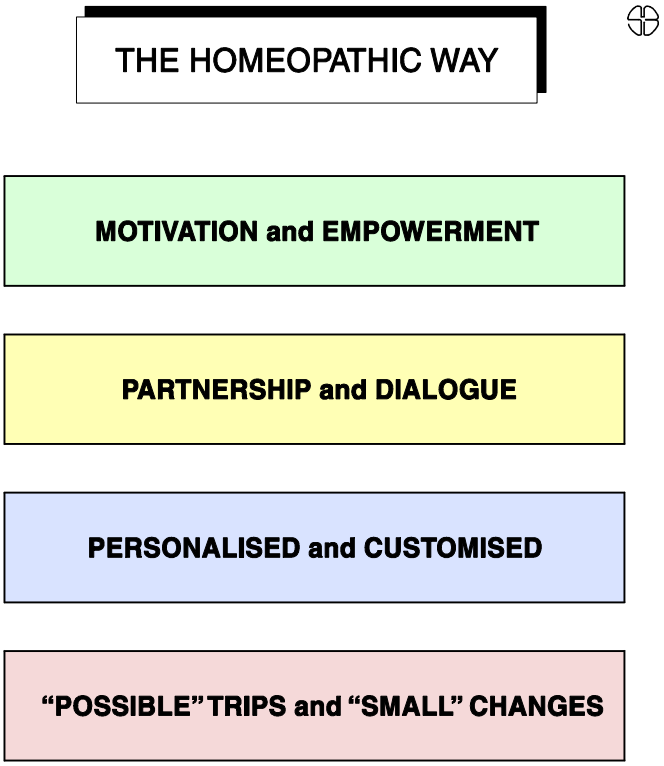
The reasons against this increased use of alternative means of transport can be grouped in two categories.

- Objective reasons (professional necessity or lack of alternatives)
- Subjective Reasons (lack of information, low acceptance, negative assessment of the alternatives on offer)

And, as shown, this subjective potential for the use of alternative methods of transport is greater than the objective difficulties. "Soft Policies" are required to unlock this potential.

It is not enough to rely upon new infrastructure. It is much more important to find measures which directly address people's problems and needs and encourage them to make their own contribution to the solution

Comparable problems are addressed in the business world by a similar marketing approach. In this case the dialogue-marketing approach is required. Mobility behaviour can be almost homoeopathically changed by appealing to people's inner strength. Citizens must firstly be accepted as partners in the search for a solution. Thereby can they be motivated to make a contribution, receiving all necessary help and information. "Dialogue" means precisely that they take an active part, agreeing themselves what information they require and not being simple recipients of streams of advertising material.

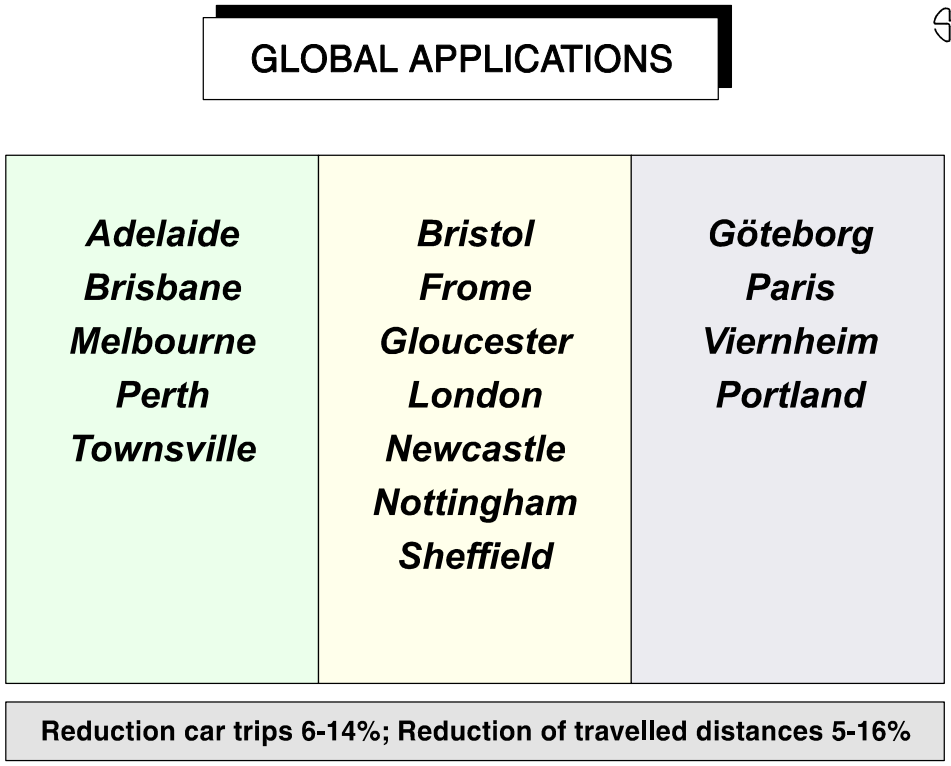


Such a dialogue marketing approach is particularly successful when it takes place at a more local level. Hereby the dialogue can be carried out in various phases.

First of all, all households should be personally addressed and motivated to think about their personal travel behaviour. Thereafter they can be grouped according to their readiness to consider changing their transport behaviour, and invited to group discussions. In these discussions they receive not only tailor made advice and information, but also rewards. Measures range from the preparation of new stopping plans for buses to home visits. Thereby this dialogue can be ever more personal, without the risk of putting the target person under pressure. Reactions to this concept have been so far very positive, leading to not only sustainable behavioural change but also clear improvements in motivation. Many of the documents referenced below can attest to this.

5 Example of an Application

The principle of using “soft policies” in order to promote the use of alternative means of transport and simultaneously reduce car use has been applied worldwide in a series of different cities and regions through the use of the individual marketing approach developed by *Socialdata*. This has been done not only in large cities but also in smaller cities, peripheral areas and suburbs.

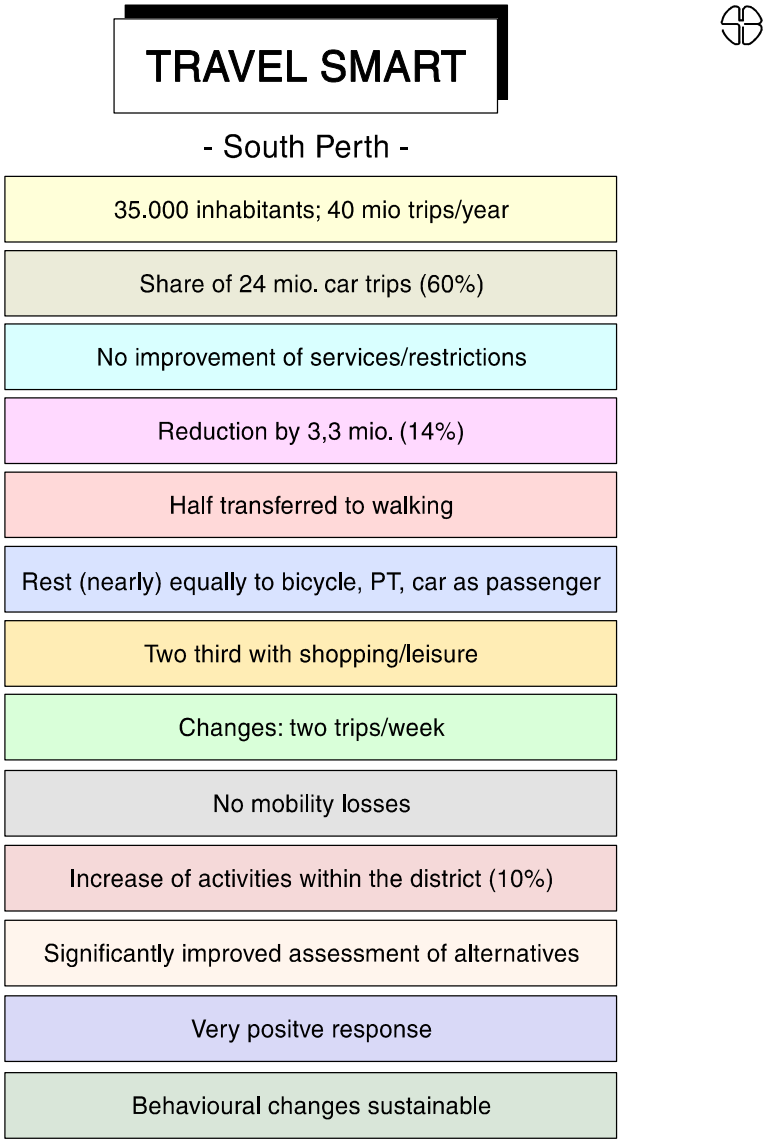


Overall these projects have been able, with the help of individual marketing, to reduce car journeys by between 6 and 14% and general car use by between 5 and 16%. At the same time the use of alternative means of transport (whether public transport or journeys by foot and bicycle) increased dramatically.

One of the most significant examples of the use of the concept – and the first entirely oriented towards environmentally friendly means of transport took place in the Perth suburb of South Perth. Here, car use was reduced by 14%, which on an annual basis corresponds to two fewer car journeys per week. Half of these journeys were transferred to foot journeys and the other half divided between the bicycle and public transport. This transfer occurred mostly in off-peak travel periods and particularly for shopping and leisure trips. Another consequence was an increased local awareness

and a further positive conclusion of the marketing action was that alternative means of transport became e much better regarded than before.

Through this reduction in the number of car journeys, there was no general decline in mobility - as had been feared. Target people tended to spend much more time moving - be it on foot or on the bicycle - and there was as much movement within South Perth as before.



Mobility research one and two years after the programme has shown that that these behavioural changes in transport choice are sustainable

6 Conclusions

All projects so far aimed at promoting the use of alternative means of transport have shown that only minor changes in behaviour are required. A change in two journeys per week (to the shop and back, for example) from car to foot can have a dramatic effect. This is proof that such “soft policies” should be a key part of any transport policy.

It can also be seen that this personalised approach with its emphasis on dialogue with the citizen can be successful not only in large conurbations but also in peripheral areas. Today´s settlement patterns certainly encourage the increase in car traffic but they are not the sole cause. By changing the approach to the car - not only of citizens but principally of transport planners - car use even in the existing urban structures can be considerably reduced, without the huge cost and risk of infrastructure projects.

At a meetimg of the London Assembly at the end of January 2002 with the theme “Reducing Traffic Congestion”, various means of reducing traffic were discussed. Discussion was led by Lynne Featherstone, Chair of the Transport Policy and Spatial Development Policy Committee of the London Assembly. In her summing up she drew the following conclusion

„We need to involve directly the people of London in finding ways to r**educe congestion – rather than impose solutions on them – and persuade people that with their support we can achieve even more. <u>That, as I see it, is one of the great merits of the individualised marketing approach; people are empowered to contribute to solutions through personal actions</u>**.“

Sources

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