

World Transport Policy & Practice

ISSN 1352-7614

Volume 6, Number 3, 2000

Mission Statement

World Transport Policy & Practice is a quarterly journal which provides a high quality medium for original and creative work in world transport.

WTPP has a philosophy based on the equal importance of academic rigour and a strong commitment to ideas, policies and practical initiatives that will bring about a reduction in global dependency on cars, lorries and aircraft.

WTPP has a commitment to sustainable transport which embraces the urgent need to cut global emissions of carbon dioxide, to reduce the amount of new infrastructure of all kinds and to highlight the importance of future generations, the poor, those who live in degraded environments and those deprived of human rights by planning systems that put a higher importance on economic objectives than on the environment and social justice.

WTPP embraces a different approach to science and through science to publishing. This view is based on an honest evaluation of the track record of transport planning, engineering and economics. All too often, these interrelated disciplines have embraced quantitative, elitist or mechanistic views of society, space and infrastructure and have eliminated people from the analysis.

To help it to reach a wide readership, encompassing advocates and activists as well as academics and advisers, WTPP is available free of charge as PDF files on the internet at <http://www.ecoplan.org/wtpp/>

World Transport Policy & Practice

ISSN 1352-7614

Volume 6, Number 3, 2000

Contents

- 3 Abstracts & Keywords
- 4 Editorial
- 5 Urban hysteria & panic in the streets – the British fuel blockade September 2000 – a social interpretation
Alan Hallsworth & Rodney Tolley
- 11 Car Sharing for Business: The Aachen region pilot project
Oscar Reutter & Susanne Böhler
- 18 The Delft Low-Cost Mobility Statement
Jan Herman Koster
- 21 Social change & Leisure mobility
Martin Lanzendorf
- 26 Professional training needs for sustainable transport: a case study of those responsible for planning for cycling & walking in the UK
Hugh McClintock
- 31 The German Marshall Fund Environmental Fellowship Program
- 32 Notes for contributors

© 2000 Eco-Logica Ltd

ISSN 1352-7614

Editor

John Whitelegg

Professor of Environmental Studies, Liverpool John Moores University, Clarence Street, LIVERPOOL, L3 5UG, U.K.

Editorial board

Eric Britton

Managing Director, EcoPlan International, The Centre for Technology & Systems Studies, 8/10 rue Joseph Bara, F-75006 Paris, FRANCE.

John Howe

Professor of Transportation Engineering, International Institute for Infrastructural, Hydraulic & Environmental Engineering (I.H.E. Delft), P.O.Box 3015, 2601 DA Delft, THE NETHERLANDS.

Mikel Murga

Leber Planificacion e Ingenieria, S.A., Apartado 79, 48930-Las Arenas, Bizkaia, SPAIN.

Paul Tranter

School of Geography and Oceanography, University College, University of New South Wales, Australian Defence Force Academy, Canberra ACT 2600, AUSTRALIA

Publisher

Eco-Logica Ltd., 53, Derwent Road, LANCASTER, LA1 3ES, U.K.

Telephone +44 1524 63175 Fax +44 1524 848340

E-mail: Editorial: <ecologic@gn.apc.org> Business Manager: <pascal@gn.apc.org>

Urban hysteria & panic in the streets – the British fuel blockade September 2000 – a social interpretation

Alan Hallsworth & Rodney Tolley

The law arrests the man or woman, who steals the goose from off the common, But lets the greater villain loose – who steals the common from the goose.

The fuel blockade of September 2000 that caused chaos on Britain's roads can be interpreted in many ways. One analysis was that it led otherwise rational individuals into perverse and selfish actions – notably in respect of fuel hoarding. This paper, conversely, suggests that the field of Game Theory offers clear explanations for such actions. This well developed field could have been drawn upon to predict the behaviours – and to devise counter-strategies.

Keywords: Fuel scarcity, Greek Chorus, Prisoners' Dilemma, Rational actions, Tragedy of the Commons, Unintended consequences.

Car Sharing for Business: The Aachen region pilot project

Oscar Reutter & Susanne Böhler

Car sharing is popular in Germany for leisure and shopping trips. This pilot project in Aachen sought to assess the demand among businesses and develop a car sharing provision. This article summarises the results and advises how such a business will succeed.

Keywords: Improved mobility, Lowered costs, Shared cars.

The Delft Low-Cost Mobility Statement

Jan Herman Koster

From 21-23 June 2000, some 80 experts gathered at IHE Delft to participate in the World Bank/Velomondial 2000/IHE Delft Expert Group Meeting on Low-Cost Mobility in Sub-Saharan African Cities. The group consisted of politicians, administrators and professionals from African national, provincial and local government levels, NGO representatives, staff from External Support Agencies (ESAs), researchers, consultants and other independent experts. The Proceedings of the Meeting contain the 'Delft Low-Cost Mobility Statement' to which the participants, as individuals, in the Meeting have agreed and committed themselves.

Keywords: Low-cost Mobility, Sub-Saharan Africa, Non-motorised Transport.

Social change & Leisure mobility

Martin Lanzendorf

Social change, leisure interests, available time and access to transport greatly influence leisure mobility. However, it is relatively unresearched. This paper sets out to clarify the subject and presents research on leisure mobility. Some results of a survey on leisure mobility in Cologne are discussed and some remarks on potential comparative European and North American research are made.

Keywords: Leisure mobility, life styles, social change, time availability, transport access, urban form.

Professional training needs for sustainable transport: a case study of those responsible for planning for cycling & walking in the UK

Hugh McClintock

This paper discusses the results of a survey in the UK to assess the training needs for those involved in the planning, promotion and delivery of policies to encourage walking and cycling. It describes the background to the study it commissioned to help assess the needs of those already working in this field and the lessons arising for improving training, its conclusions and implications.

Keywords: Cycling, Walking, Professional Training, Technical Guidance, Policy-making and implementation, Dissemination.

Corrections to WTPP 6.2

The following corrections are needed to the text of "The Vasco da Gama Bridge on the Tagus Estuary: A paradigm of bad decision making, but good post-evaluation" by João Joanaz de Melo...

The final phrase of the citation of CSOPT (p. 25) should read (amendment in capitals): 'on the WESTERN corridor there may be technical problems of some complexity, such as found in the construction of 25 Abril bridge'; and

The first phrase of the first paragraph beginning on p. 29 should read (amendment in capitals): 'The last verification, in the CAO final report (CAO, 1999) indicates that by late 1999 most of the measures related to the construction phase were at last COMPLETED, with two major exceptions'.

The transport situation in the UK in October/November this year has provided a fascinating and worrying example of how quickly things can go wrong and how reluctant politicians are to put them right. At first sight none of the three major things to go wrong are related. A train crash involving fatalities was quickly diagnosed as the result of a defective rail. This was then followed by the imposition of speed limits (110 mph down to 20 mph) on many stretches of the main lines in Britain. At the same time, disastrous weather conditions leading to floods and landslides shut lines completely and an alliance of truckers, farmers and others have threatened to disrupt communications unless the government reduces fuel taxation. Faced with this trio of disasters and a chorus of discontent from the omnipresent, omnipotent and omnivorous tabloid press in this country the government has hesitated, obfuscated and refused to make connections. It has quite correctly refused to bow to demands from the fuel protesters but beyond that has been incapable of presenting a case in support of current (or higher) fuel taxation beyond the rather crude non-explanation that it needs the revenue.

The onset of such a level of crisis in transport at the start of the 21st century in an advanced industrial society deserves some thought and analysis. There are some immediate surprises. First, the sheer vulnerability of the system as a whole has come as a shock to almost everyone, not least politicians. How is it possible for things to grind to a halt so quickly? A combination of complex lifestyles making demands on transport systems that would have been undreamt of 30 years ago and an industry shaped by market-driven, ideological dogma has pushed us into perpetual crisis. All transport professionals repeat the mantra that growth in demand for travel is a sign of economic progress... but is it? Is it not rather more of a sign of thoughtless consumption where distance becomes an end in itself? Is there any real reason for, or gain from, increases in distance travelled each year? If we base our post-modern lifestyle on spatial separation, long distances, complex multi-purpose trips, fossil fuel energy and tight time budgets then we have created a system that is intensely vulnerable. We are now reaping the whirlwind of that vulnerability.

What about the weather? The floods that have caused such widespread disruption have once again initiated a discussion about global warming and climate change. Predictably scientists, journalists and politicians have reminded us about the great floods and winds of 1703 which then leads (illogically) to the conclusion that there is no link with global warming. Global warming is unlikely to be demonstrated through some formal mathematical proof in a way that convinces skeptics that (a) it exists and (b) it is caused by fossil fuel burning in which transport plays a prominent role. Does the absence of this proof mean it does not exist? Given that the consequences of climate change are so

awesome it is incumbent on us to make judgments based on the best available evidence and then to act accordingly (the so-called Precautionary Principle), rather than pursue the 'Ostrich Principle' of ignoring the evidence in the hope that it will remain unproven and go away. This conundrum still draws blood in political debates with government heavily in thrall to the will of business and terrified of annoying aviation, oil, gas and car interests. There isn't even an intelligent debate and government finds it very hard indeed to say that we should move steadily in the direction of reducing fossil fuel dependency. This has prepared the ground very nicely for the next crisis.

Truckers, farmers and others with strong views that the route to Utopia can be opened up through cheap petrol and diesel have very successfully thrown the government on the defensive. No one in government is prepared to go on the offensive and spell out just exactly what kind of gridlock, smog ridden cities and asthmatic children we will purchase with all this cheap fuel. More worryingly government ministers up to their waists in floods are still reluctant to make the glaringly obvious connection between the floods, climate change, cheap fuel and the future. Of course there would be an argument and there is scientific controversy but all that applies even more so with far more worrying consequences in the opposite (cheap fuel) scenario. Do we really need to reduce the cost of lorry trips that transport huge amounts of goods from one end of the country to the other and then back again in the pursuit of logistic efficiency? Do we really need to drive children to school or to drive to shops and workplaces that are within a 20 minute walk or bike ride? What kind of society do we want to build and what kind of future awaits the old, the young, those who don't want to drive, those who can't drive and those who want a city that is a little bit different to the dirty, smelly dangerous ones currently on offer.

The most dramatic failure of all and one that runs through all three crises is the abject failure of government, business and many individuals to make the links. It is possible to have a strong economy, reduced vulnerability to transport shocks and oil crises, better quality of life, healthy cities and healthy people. We can even make sure we reduce the probabilities of severe weather events. All we have to do to get to this desirable situation is provide transport choices, encourage lifestyles that are not locked into car dependency and move away from fossil fuel dependency. More importantly if we are to avoid the really big crises we have to move towards a global consensus that a planetary vehicle population of 2.5 billion by 2030 is simply not desirable. This is and will be a severe test of local and global political institutions and the outcome is by no means clear.

John Whitelegg
Editor

World Transport Policy & Practice

Urban hysteria & panic in the streets – the British fuel blockade September 2000 – a social interpretation

Alan Hallsworth & Rodney Tolley

Address for correspondence

Professor Alan Hallsworth

Division of Geography, School of Sciences, Staffordshire University Leek Rd., Stoke-on-Trent. ST4 2DF.

<a.g.hallsworth@staffs.ac.uk>

Abstract

***The law arrests the man or woman,
who steals the goose from off the common,
But lets the greater villain loose –
who steals the common from the goose.***

The fuel blockade of September 2000 that caused chaos on Britain's roads can be interpreted in many ways. One analysis was that it led otherwise rational individuals into perverse and selfish actions – notably in respect of fuel hoarding. This paper, conversely, suggests that the field of Game Theory offers clear explanations for such actions. This well developed field could have been drawn upon to predict the behaviours – and to devise counter-strategies.

Keywords

Fuel scarcity, Greek Chorus, Prisoners' Dilemma, Rational actions, Tragedy of the Commons, Unintended consequences.

Introduction

In September, 2000, Britain experienced a surprisingly substantial economic crisis – and a clear challenge to its democratically-elected Central Government – as a result of the actions of a few semi-organised individuals who chose to 'blockade' fuel depots. To a considerable extent, the effects of the blockade were exacerbated by what seemed to be irrational and perverse acts by members of the general public. Broadly, fuel stocks were consumed by the public at an even faster rate than normal – accelerating the pace of the very depletion they feared. Appeals by Government for 'voluntary restraint' were plainly disregarded. In this paper we revisit previous work and suggest that such actions can, in fact, be interpreted as the consequences of social traps (Platt, 1973; Brechner, 1977; Costanza, 1984; Hallsworth, Tolley, Evans & Black, 1996; Hallsworth & Black, 1996) and the unintended consequences of the actions of others (Hallsworth, Tolley & Black, 1995). Consider the widely-reported instances of various forms of fuel hoarding – all of which led the available fuel to run out far more

quickly than apparently need have been the case. Whilst some drivers went on their way in largely untroubled fashion, others descended into danger and to farce. One driver was reported to have found a filling station with supplies and promptly filled up. It allegedly required just 0.11 of a litre – 9 pence worth of fuel – to achieve this. A taxi driver in Derby was found to have been hoarding fuel in a variety of unsuitable containers. One of these leaked and several houses had to be evacuated. Transparently, some members of the public were panicked into apparently irrational and dangerous behaviour. Why should this be so? Is fuel dependence akin to fuel addiction and requiring of a 'fix'? One further possible explanation lies in the concept of the tragedy of the commons.

The tragedy of the commons

The tragedy of the commons model was outlined by Roberts and Emel (1992 – see also Edney & Bell, 1983), and belongs to the family of social or 'no technical solution problems' Hardin (1968). There are also parallels to the work of Hirsch (1977) who declared that the potential solutions to problems caused by economic growth pressures had to be inherently social in nature. Hardin looked back to the work of Lloyd (1794-1852) for the initial formulation of the tragedy of the commons. The scenario revolves around a common pasture on which herdsmen freely graze cattle. It can be shown that, for all players, the immediate payoff of adding one further beast far outweighs the disbenefits. All the product of the benefits of free usage accrue to individuals. The penalties are the risks of overgrazing – and these risks are shared by the collective: accordingly, the disbenefit factor is pro-rata the number of players. It follows that the greater the number of herdsmen, the more minor the share of the aggregate disbenefit. The effects are twofold: one is that no one individual is required to act to organise 'fair shares'. The second is that any blame/future disbenefit is shared and the larger the number the less personally any blame is felt. Common expressions of this situation are 'if I don't do it somebody else will' or 'Why blame me – I only did what everyone else was doing'. Clearly,

hitherto-uninterrupted fuel supplies could be regarded as a 'commons' for purposes of this argument. Hardin was unequivocal:

'Ruin is the destination to which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin to all.' (Hardin, 1968, p. 1244)

We previously observed that

'There is the irony, in many commons situations, that the speed of resource depletion actually accelerates once people realise that the commodity is fast vanishing. The pressure, risk-taking and the rewards all increase as the hunt goes on for the few remaining white rhino, for example.' and...

'How often does one see usage of the office photocopier rise precipitately when it is announced that use is about to be curtailed as part of budget cutbacks! Is this not exactly analogous to the white rhino situation? The pace of the race to exhaustion of a scarce resource is accelerated as the awareness of scarcity increases.' (Hallsworth & Black, 1996)

This is a key point for our interpretation of the fuel crisis. Whilst, hitherto, most sensible people had concluded that all oil supplies would ultimately run out, this was expected years hence at some unspecified future date. Only after the blockade began did people realise that Britain's immediately-available oil supplies were, in fact, widely reported to be just a day or two away from depletion. In effect, the drivers behaved like herdsmen... they rushed to graze cattle on the commons before the benefit was lost forever. With only enough fuel for two or three days being kept at the filling stations, supplies could be depleted simply by everyone filling their tank.

Hardin argued that the insistence of Adam Smith that the individual should apply himself only to 'his own gain' (also covered by Barnes & Sheppard, 1992) would, under most circumstances, lead the rationally-maximising herdsman to continue to add to his herd. That is the clear route to maximum individual payoff (in the short term, at least). The problem arrives later when the common ground is overgrazed and it can be seen that maximising individual gain has indeed worked quite superbly in the short run – but failed disastrously in the long run. Hardin argued that only some form of collectively-agreed control that is sensitive to the total picture – as it is experienced at the time – can solve the social trap exemplified by the tragedy of the commons. As he put it (1968, p. 1247), it requires 'mutual coercion mutually

agreed upon' but it has so often been seen that restraint upon individual freedom is not politically workable... particularly when the situation that demands restraint was apparently not foreseen. So, the fuel hoarders and toppers-up are behaving rationally in a tragedy of the commons. Once the finite nature of a resource is realised there is always likely to be a race to consume the best of what is left.

The Prisoners' Dilemma

The second model that we can revisit is the Prisoners' Dilemma (Rapoport, 1966, 1982, 1988). When the fuel crisis first struck, the appeal to voluntarism by users was of the form 'only what you need' and leave supplies for essential users such as doctors. In other words, this was a direct appeal to leave aside the self-interest so inherent in a tragedy of the commons. Part of the problem was that individual 'need' was to be self-defined and for some this meant not just a full tank but extra containers stored away. The insight of the Prisoners' Dilemma is that it revolves around an inability to make an optimal decision because any decision is bound up with uncertainty and with the effects of decisions being made simultaneously by others. According to Barry and Hardin (1982, pp. 24-25, 11-12):

'the Prisoners' Dilemma was discovered around 1950 by Flood and Dresher... it was later named the Prisoners' Dilemma by A.W. Tucker who invented the story of the two prisoners.'

In the story...

'two prisoners suspected of a serious crime are put in separate cells and each offered the same deal... if you confess to the crime then you will be freed – provided the other prisoner does not confess. You will (both) receive a moderate sentence if you both confess... however, if you don't confess and the other prisoner does, you will get a maximum sentence.'

It is clear that, because the prisoners cannot meet to form a collective strategy, the pressure is to act before the other does. Only in a few instances – one some years ago in Britain where parents walked free since neither would confess to the killing of their child – is no 'confession' forthcoming. In this dilemma, each prisoner cannot be certain what the other will do and is forced to resort to guesswork... all the incentives are to be the first one to confess. The extra element that this brings to the 'commons' problem is that it stresses the significance of not knowing what the other person will do. Of course, if the other person is known to be a relative, or person of high integrity, the risk of false confession is less. If the other captive could literally be anyone then our prisoner cannot

imagine how they will react. In the petrol shortage model, we are trapped with 20 million other people in the next cell. The chance that they will behave 'responsibly' seems remote. So, the 'rush to confess before the other does' parallels the pressure to fill up before everyone else does. Again, because no individual car driver can assume that the other 20 million or so will behave responsibly it is, as ever, safest to act in self-interest. The problem is that the notion that it is best to head rapidly for the filling station occurs virtually simultaneously to all the intending 'free riders'; each secretly hoping that the other person will be the one to stay at home. At the very least, fuel buying behaviour in the blockade crisis offered interesting insights on the workings of unenlightened self-interest.

Hirsch wrote:

'Considered in isolation, the individual's demand... can be taken as genuinely individual wants... acting alone, each individual seeks to make the best of his or her position. But satisfaction of these individual preferences itself alters the situation that faces others seeking to satisfy similar wants... What each of us can achieve, all cannot' (Hirsch, 1977, pp. 4-9).

In other words, as long as everyone 'plays the game' and takes only a small amount then all will benefit, but the pressures rarely tend that way. So, if all behaved responsibly, the queues would shorten – leaving more chance for that unnecessary top-up. Reporting events such as that of the '9 pence top-up' merely suggests to others that irresponsibility was the accepted norm. Cross and Guyer found an analogy when they researched the voluntary speed restraint which applied for a time in the USA.

'They observed "co-operative drivers travelling at fifty-five miles per hour soon realised that other drivers who passed them at high speed were consuming the very fuel that they were making efforts to conserve... (they) eventually concluded that they would rather be going at highway speeds when the gas ran out".' (quoted in Hallsworth, Tolley & Black, 1995, p. 44).

This serves to remind us that voluntarism has a poor track record in respect of the roads – which is why highways are always such highly-regulated environments. As the volume of traffic increases, so does the complexity of measures needed to stop voluntarism. Left to their own devices, drivers block intersections –yellow boxes ensue. Left to their own devices, the high speeds preferred by drivers ensure hold-ups on the M25 orbital motorway – lower advisory limits are posted to clear the jams. Many high-capacity roundabouts need to be regulated by

traffic lights – otherwise joining traffic from minor roads would queue endlessly since vehicles already on the roundabout prefer to travel too fast to permit their entry... and so on.

Greek choruses

The media, too, have an interesting role to play in social traps. Headlines suggesting the imminent end of fuel supplies merely inflame those who would wish to have such supplies. We earlier suggested

'The best dollar auctions seem to come when the participants are urged onwards by others. Teger (1980, p. 18 – see also Cassady, 1963) found this happening when ROTC classes participated in dollar auctions)' (Hallsworth & Black, 1996).

So we need to be aware of possible 'Greek Choruses' that keep the process moving along. The media act as just such Greek choruses – advising all of the accelerating speed of resource depletion... just as some reported (and supported) the 'dump the pump' protest of August 2000. Indeed, on September 19th 2000, in the week following the initial fuel blockades, motorists again rushed to form queues – because of unfounded media rumours that protest action was set to recommence. Some measure of the improvement in public attitudes was that one regional TV station found evidence that the 'panic purchase' minimum had shot up to 77 pence... but still a 'fill up' of less than one litre. By 'rationally' filling up these second-wave motorists were yet again creating the very shortages they so detested. In an analogous situation, which leads us on to a third set of behavioural situations, Barnes and Sheppard stated:

'choices... may set in motion unintended consequences that subsequently undermine... the very (profit maximisation) that such choices were designed to achieve' (Barnes & Sheppard, 1992 p. 5).

Rational actions & Unintended consequences

The notion of the unintended consequence is yet another that we have previously considered. Whilst economic disruption was the primary goal of the fuel protesters, other outcomes are usually inevitable. It may have seemed rational to the protesters that they should gain attention for their grievances by direct action. They are unlikely to have anticipated this leading to on-line auctions of buckets of fuel or that over-filling of diesel tanks by hoarders would lead to spillages that brought cyclists and motorcyclists into added danger. A possible beneficial unintended consequence might have been the hopefully-permanent switch of trips from the car to more sustainable forms of transport. This blockage, and its predecessor 'dump the pump' may however, have been

too short-lived to stimulate individuals into locational moves to more sustainable environments (such as back from the suburbs to the city). Equally, those choosing to drive at lower speeds may have noticed the fuel saving (if troubled by the need to pay for their own fuel) and decided to maintain lower speeds in the long term. Incidentally, to return to the 'commons', it is transparent that the company car driver who does not personally pay for fuel is far more likely to see fuel as a commons 'free to all' than would the private motorist. Unless regulated by corporate policies on fuel consumption, then, the company car driver is more likely to be profligate and to be among those driving unnecessary extra miles for a 'top up'. As a further unintended consequence, the protesters were unlikely to have anticipated profiteering by some garages – where prices were reported to have risen by 300% and more. From the protester viewpoint, the act remains a rational one – indeed, Barry & Hardin suggest that the idea of rationality seems to have:

'displaced both truth and morality as the ultimate criterion for judging both belief and conduct' (Barry & Hardin, 1982, p. 368).

Rational re-action?

Social traps (and crisis situations themselves) clearly undermine our perceptions of rational action. Does this offer lessons for (rational) Government reaction – and has such action been 'rational' in the past? Often Governments do behave rationally – when they have the chance to plan ahead. One key to the recent fuel blockade was the paucity of supplies already available beyond the gates of the refineries. Conversely, when Margaret Thatcher set about defeating Britain's coal miners in the 1980s she ensured plentiful supplies of coal above ground before commencing. But just what constitutes rational behaviour in a dispute? Most nationally-significant disputes in Britain have hitherto been between workers and Government. Consider the stand-off between the Conservative Government and the Ambulance workers in the late 1980s. The British Ambulance workers took industrial action for more pay. The intransigence of the Government was such that they happily allowed the dispute to continue well beyond the point at which the cheaper (rational?) option would have been to pay up and settle. Furthermore, the very preparedness of the Government to continue beyond the point at which it was apparently rational so to do (see Ghemawat, 1991) had two effects. One was that the workers themselves began to perceive that they would, in a very long-term dispute, come to lose more than they could gain. The second effect was that a display of intransigence by the Government was likely to be

sufficient to deter other public-sector unions from entering into disputes. At the level of public relations, the Government was 'staring down the strikers' in order to forestall what it would view as worse problems later (Teger, 1980). What the Government was demonstrating, above all, was its power to resolve outcomes to its own satisfaction. It was clearly revealed to all that the British ambulance workers lacked the power even to pull the Government to the table for further negotiations. This process of asserting power has continued apace in Britain with Governments systematically dismembering any workplace-based power blocs that might cause disruption at a national scale. The challenges to Government power that came from large Trade Unions – and their actions in concert with others – in the 1970s are now both structurally impossible and generally illegal.

It is interesting then, that many proposed that the rational action towards the fuel blockade from Tony Blair's New Labour was a similar show of intransigence in the face of extra-Parliamentary opposition. However, whilst it is true that elective dictatorships rarely welcome counter-displays of power, that would be to misread the structure of the situation. In the ambulance dispute cited above, the Government was *de facto* in the role of employer and it had a clearly-identified and legally-constituted 'institutional' opponent. Most crucially, if the ambulance drivers failed to work then they received no pay... they could be starved back to work. The position was generally financially neutral for Government and any unforeseen costs from disruption would be minimal relative to its financial power.

The September 2000 fuel blockade, conversely, allowed individuals with no clear financial link to Government to deprive that same Government of tax revenues. In the fuel blockade it was the Government – not the protesters – who were over the (oil) barrel. Whereas in most disputes the Government controls the commodity (capital) that the protesters desire (and can refuse to release it) the fuel protesters were in control of, and refusing to release, the key commodity – oil. Having not acted in advance to ensure continuity of supply, Central Government had no response to the fact that only limited amounts of fuel (rather than huge coal stocks in the Thatcher case) were available. Further, because of the mindset in Britain's 'anglo-conflictual' rather than 'Euro-consensual' climate for labour relations, the prior assumption was that opposition could only come from organised labour. Such, clearly, proved not to be the case and the 'leaderless' nature of the revolt only added to the difficulties in making a

rational response.

Conclusions & Policy Suggestions

In this paper we have tried to demonstrate that the apparently irrational and often antisocial behaviours that follow in the wake of a public panic are by no means unusual or unpredictable. The field of study that covers Social Traps, Game Theory and decision-making under uncertainty is sufficiently well developed to have case lore on most of the behaviours experienced in September 2000. It is also noticeable that some media commentators felt that the 'antisocial' behaviours stood in stark contrast to the more cohesive 'Dunkirk spirit' so often invoked. Yet past fuel crises have been met by Government action in the form of rationing – which suggests that a reliance on self-restraint is the exception rather than the rule. In fairness, rationing books take time to print and will only apply when a long interruption or diminution of supply is anticipated. However, contingency planning by Governments ought to take into account more 'socialised' reactions to shortage. At time of writing, Central Government is planning legislative reactions to the blockade protesters. It might also be useful to incorporate simple measures to regulate the hitherto self-interested behaviour at the pumps. For example (in the manner of a hosepipe ban during water shortages) fuel purchases could be limited to exactly £10. Those requiring less than this would still pay £10 – which offers both a disincentive to greed and a free opportunity for legitimate profiteering by filling stations. For once, the uncertainty would be in the minds of the excessively self-interested – they would have the challenge of deciding when their fuel tank would accommodate £10 worth of fuel. Another useful policy would be to enforce – as in other countries – penalties for those who block motorways having run out of fuel. Clearly, that measure relates to road safety through keeping carriageways clear – but it has the unintended consequence that it encourages drivers not to rely on low fuel tanks. Had such policies been in force, the chances are that the average British fuel tank would have been fuller before the blockade started (akin to above-ground coal supplies) and that supplies would therefore last longer. Unfortunately, Britain is disappointingly tolerant of the 'free rider' who runs a vehicle on a shoestring – often to the detriment of the environment. The above suggestions can hopefully be added to – with the aim of ensuring more orderly behaviour in future 'mass hysterias and panics'.

Acknowledgements

The authors are grateful to the Editors and, as ever, James Thompson of Middlesex Hospital/UCL for

their helpful comments.

References

- Barnes, T. & Sheppard, E. (1992) 'Is there a place for the rational actor? A Geographical critique of the rational choice paradigm' *Economic Geography* 68/3 pp. 1-21.
- Barry, B. & Hardin, R. (1982) *Rational man & irrational society?* Beverly Hills, Sage.
- Brechner, K. (1977) 'An experimental analysis of social traps' *Journal of Experimental Social Psychology* 13, 522-564.
- Cassady, R. (1963) *Price warfare in Business Competition: a study in abnormal competitive behaviour* E Lansing, Michigan Bureau of Business & Economics, Graduate School of Business Administration. Michigan State University (cited in Teger, 1980).
- Costanza, R. (1984) 'The nuclear arms race and the theory of social traps' *Journal of Peace Research* 21,1 pp. 79-86.
- Cross, J. & Guyer, M. (1979) *Social Traps* Ann Arbor, University of Michigan Press.
- Edney, J.J. and Bell, P.A. (1983) 'The commons dilemma: comparing altruism, the Golden Rule, perfect equality of outcomes and territoriality' *Social Science Journal* 20, 23-33.
- Ghemawat P (1991) *Commitment: the dynamics of strategy* New York, Free Press.
- Hallsworth, A.G., Tolley, R.S. & Black, C. (1995) 'Psycho-social dimensions of public quiescence towards risks from traffic-generated atmospheric pollution' *Journal of Transport Geography* Vol. 3, no. 1, pp. 39-51.
- Hallsworth, A.G., Tolley, R.S., Evans, D. & Black, C. (1996) 'Assessing traffic-generated 'dread' risk' *World Transport Policy & Practice*, Vol. 2, no. 4, pp. 3-7.
- Hallsworth, A.G. & Black, C. (1996) 'Psycho-social aspects of traffic and travel behaviour' presented to annual conference, Institute of British Geographers, Strathclyde University, January (unpaginated).
- Hardin, G. (1968) 'The tragedy of the commons' *Science* 162, 1243-1248.
- Hardin, R. (1982) *Collective Action* Baltimore, Johns Hopkins University Press.
- Hirsch, F. (1977) *Social limits to growth* London, Routledge.
- Platt, J. (1973) 'Social traps' *American Psychologist*, 28, 641-651.
- Rapoport, A. (1966) *Two-Person Game Theory: The Essential Ideas* Ann Arbor, University of Michigan Press.
- ____ (1982) 'Prisoners' dilemma – recollections and

observations' in Barry, B. & Hardin, R. *Rational man and Irrational Society?* pp. 72-83, Beverly Hills, Sage.

____ (1988) 'Experiments with N-person social traps 1: Prisoners' dilemma, weak prisoners' dilemma, volunteer's dilemma, and largest number' *Journal of Conflict Resolution* Vol. 32, No. 3, 457-472.

Roberts, R. & Emel, J. (1992) 'Uneven development and

the Tragedy of the Commons: competing images for nature-society analysis' *Economic Geography* 68, 3, pp. 249-271

Smith A (1776) *An Inquiry into the Nature and Causes of the Wealth of Nations* London, Dent (1975 edition).

Teger A (1980) *Too Much Invested To Quit* New York, Pergamon.

Car Sharing for Business: The Aachen region pilot project

Oscar Reutter & Susanne Böhler

Address for correspondence

Dipl.-Ing. Susanne Boehler

Transport Division, Wuppertal Institut für Klima, Umwelt und Energie, Doeppersberg 19, D-42103 Wuppertal, GERMANY

<s.boehler@wupperinst.org>

<http://www.wupperinst.org>

Abstract

Car sharing is popular in Germany for leisure and shopping trips. This pilot project in Aachen sought to assess the demand among businesses and develop a car sharing provision. This article summarises the results and advises how such a business will succeed.

Keywords

Improved mobility, Lowered costs, Shared cars.

Introduction

In Germany, some 30,000 people use car sharing vehicles, mainly in their spare time and for shopping. But is it conceivable that the computer support technician or the architect would use a shared vehicle instead of a company car or their own private car for the trip from the office to a client or a building site? Can car sharing, the typical mobility service for private households, also work for businesses? Will this guarantee the firms' mobility, help to reduce its costs and possibly become an economically sustainable field of business for the car sharing providers? These were the issues for a pilot project in the Aachen region.

Project aims

The pilot project 'Car Sharing for Companies in the Aachen Region' was carried out in Aachen, Düren and Hückelhoven, towns between Maastricht (NL) and Köln (see Figure 1) from March 1998 to July 1999. This innovative service, designed especially for companies, made it possible for local companies to use an external mobility offer in the form of car sharing vehicles. During this period, the companies and authorities were able to access a continuous, acceptable, flexible and inexpensive supply of cars as an alternative or in addition to their own pool. A reduction in mobility costs can contribute to a company's competitiveness and may ease the set-up costs for young entrepreneurs.

An innovative contribution to regional policies was to be made concerning structure, promotion of local economy, environment and transport for the Aachen region, and especially for the Heinsberg district which is characterised by the decline of its traditional coal mining industries while at the same

time having a rural structure. The aims of the pilot project were to find out:

- how to design a car sharing scheme catering for the needs of companies;
- how car sharing for private and business use can be combined to run efficiently; and
- what possibilities exist for its sustainable establishment and spatial expansion.

Project background

With car sharing, a mobility service provider organises the car pooling, so that the purchase costs and the fixed costs are shared amongst all users and, therefore, reasonable savings are made possible. The users enter a general utilisation contract with this car sharing service provider (StadtteilAuto Aachen, in this instance), whereas the actual booking of the vehicles is done by contacting an established 24-hour call centre.

Experiences and research on the use of car sharing by private households show that (Baum & Pesch, 1996; VCD, 1997):

- a car sharing vehicle replaces approximately four private vehicles so that car sharing saves precious space, especially in towns and conurbations;
- because the costs depend on the frequency of use and dissimilar access to cars, transport behaviour changes significantly:
 - the frequency of journeys by car decrease for persons who previously possessed their own car,
 - mobility by car is planned more rationally. activities are linked together and lines of communication are formed,
 - spontaneous, individual journeys are reduced so that the degree of utilisation increases,
 - the total number of kilometres driven is reduced,
 - participants in car sharing use public transport more often, especially for short distances;
- the environmental effects (noise and air pollution) of traffic, the consumption of energy and the risk of accidents decrease with the kilometres saved

- which are normally travelled by car;
- the intensive use of the vehicles leads to a frequent renewal of the pool so that it meets the newest technical standards; and
- because the pool can offer a wider selection of vehicles than individuals normally possess, a vehicle suitable to the occasion can be chosen.

Until now, car sharing was mainly offered as an alternative to the individual ownership of a car by private householders. Today, more than 30,000 users are registered with the 100+ providers in the German Federal Car Sharing Association. Apart from rare exceptions, the car sharing providers have not yet seen the business sector as a potential market, although conventional/family cars are used for commercial purposes, such as for personnel, services and administration.

Of the approximately 44 million heavy goods vehicles and motorcars registered in the year 1998, 6.1 million vehicles (14 %) were registered to business or administration owners. From this figure, about 4.4 million motorcars can be assigned to (employee, service and administration) business transport (Kraftfahrt-Bundesamt, n.d.). In addition to this, an unknown number of privately-registered cars can be added which are used occasionally or frequently for business purposes. Business and official journeys make up approximately 19 % of all trips undertaken by means of motorised individual transport, while commuters account for some 29 % of motorised individual trips (Bundesministerium für Verkehr, 1998). Business is responsible for some 24 % of the distance travelled, compared with commuters at 26 % (Bundesministerium für Verkehr, 1998). According to a forecast by the German Institute for Economic Research (Deutsches Institut für Wirtschaftsforschung/ DIW) for the year 2010,

business and official transport (especially in urban areas) will continue to increase by 16 %. In comparison, the increase for all journeys is estimated to increase by 6 % (Schütte, 1997, p. 27). Consequently, more thought is being applied to this segment of the transport jigsaw. Integrated business mobility management or business transport planning aims to rationalise business transport processes and thus optimise the mobility potential and minimise transport costs.

Project implementation

Against this background, the 'Pilotprojekt Car-Sharing für Betriebe in der Region Aachen' (Car Sharing Pilot Project for Companies in the Aachen Region) was conceived and implemented within the framework of a public-private partnership. The project, which has been supported by the Ministry for Economic Affairs, Technology and Transport of the North Rhine-Westphalia State and by funds of the European Union, was scientifically analysed by the Wuppertal Institute for Climate, Environment and Energy (Reutter, Böhler & Warmke, 1999). Aachen's Association for Innovations and Technology Transfer, as a regional development corporation, was responsible for project management. It co-ordinated the different local activities and supported the establishment of a car sharing location at Aachen's technology centre 'Am Europaplatz'. The City of Düren's Association for the Promotion of the Local Economy (AGIT) assisted in setting up the initial service centre. Similarly the AGIT in the Heinsberg district aided the establishment of a service centre at the Hüchelhoven enterprise service centre (Gründer- und Servicezentrum Hüchelhoven/ GSZH). The Ford Research Centre in Aachen helped by placing seven vehicles at the project's disposal.

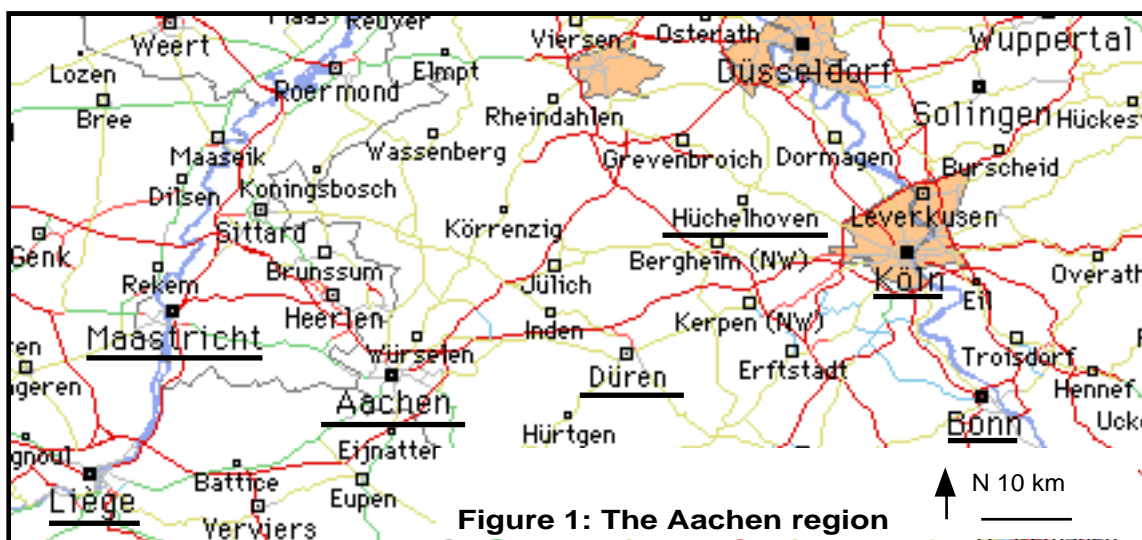


Figure 1: The Aachen region

StadtteilAuto Aachen GmbH, one of the oldest and biggest car sharing providers in Germany with 24 vehicles at 16 locations (when the project started) for 737 car sharing users, took care of the marketing, pool management and all services related to car sharing. Other external support came from the Aachen Chamber of Industry and Commerce, the Aachen Tram and Energy Supply GmbH (ASEAG) and Aachen's Transport Union (AVV). Through continuous dialogue between the project partners, its co-ordination and development was secured and prompt decision making systems were established.

New car sharing stations with reserved parking spaces were established in Aachen (large city, 246,000 inhabitants), Düren (town, 90,000 inhabitants) and Hückelhoven (small town, 38,000 inhabitants) at locations with a high density of service sector businesses. Three Ford vehicles (Ka, Escort-Turnier and Mondeo) were made available at the car sharing station at Am Europaplatz. In the technology centre itself, 69 resident companies were potential car sharing clients. In addition, a further 582 companies in the whole of Aachen were informed about the car sharing offer. Two vehicles (Escort-Turnier and Transit) were placed at the GSZH in Hückelhoven. In the GSZH, 32 young enterprises were identified as potential car sharing clients, with another 19 companies within the vicinity. In the centre of Düren, one car sharing station was furnished with two vehicles (Fiesta and Escort-Turnier) at a central location with 288 companies as possible car sharing clients in its catchment area.

Companies who wanted to make use of the offer were able to take part under very favourable conditions as project participants:

- the security deposit was limited to 1,000 DM, regardless of the number of authorised drivers (usual deposit: up to 2,000 DM);
- the usual registration fee of 200 DM was cancelled; and
- the monthly fee of 10 DM was disregarded until the end of the project's test period in July 1999.

The usage charges (combined time and kilometre charge) corresponded to the usual tariff structure of the local car sharing organisation StadtteilAuto Aachen.

During the one year test period, 43 companies took part at the three different locations in Aachen (31), Düren (7) and Hückelhoven (5). Because of the good response at the location in Aachen, the offer was extended to a fourth location at Aachen's Landesbehördenhaus for the remainder of the test period at the end of March 1999. The location at the GSZH in Hückelhoven was closed at the end of the test period because of the low number of project participants and therefore below average rate of vehicle utilisation. The location in Düren which had a rather restrained demand during the project period, was retained and the promotion of car sharing to private households was intensified. At the end of the project time, the customers of StadtteilAuto Aachen consisted of 484 contracts with 966 authorised drivers. The growth rates during the project period thus

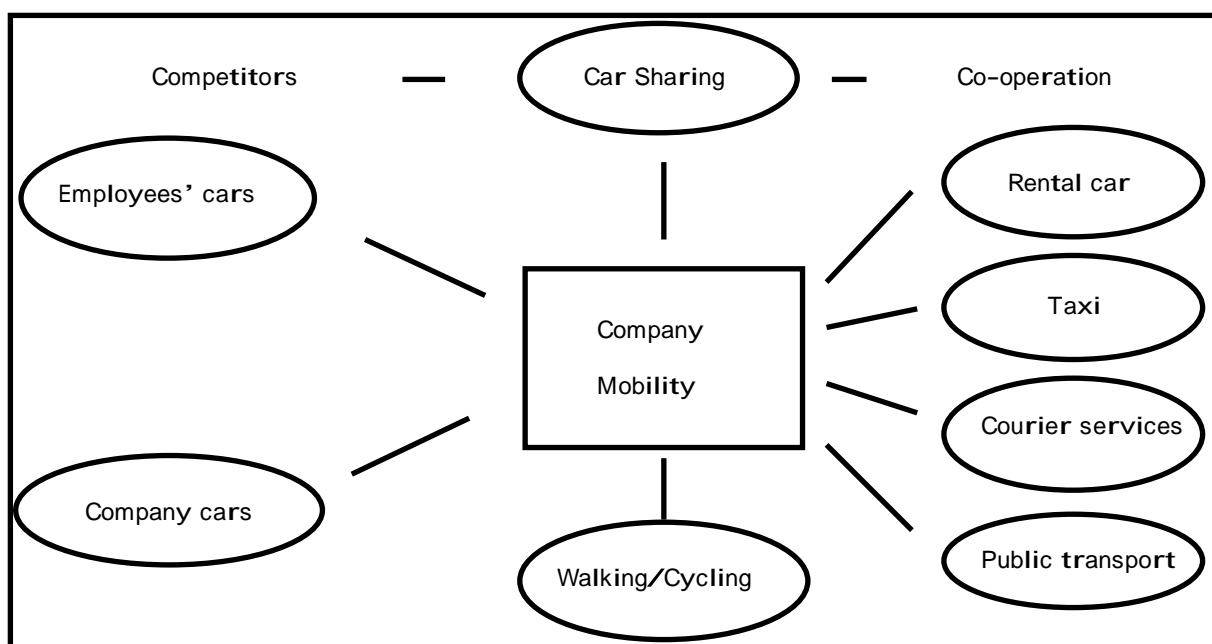


Figure 2: Companies' mobility choices Source: Wuppertal Institut, 1999

correspond with the usual growth rate at StadtteilAuto Aachen, but the share of business clients increased significantly during this time from 8 % to 13 % of all contracts and from 31 % to 42 % of all authorised drivers.

The full report (Reutter, Böhler & Warmke, 1999) by the Wuppertal Institut analyses participating companies' usage behaviour and interviews all firms involved. It looks at it from the customers' viewpoint, why and how they used (and didn't) the available vehicles; and at the mobility supplier's (StadtteilAuto Aachen) experiences. The most important results of the accompanying research work are described below.

Structure of participants

The participating companies were small and medium-sized firms at all three locations. The share of very small firms with less than five employees is high at 45 %. Half of the companies are architects/engineering offices, computer firms or other services. One-third of all participating firms are less than two years old; however one-third are more than ten years old. Two-thirds of the firms are single companies, only 10 % are subsidiaries. The biggest share of authorised drivers are in the middle of their professional life: nearly 85 % of the participants are between 26 and 45 years old. The educational standard of the authorised drivers is above average: 75 % are high school graduates and more than 55 % went to a tertiary college.

Approximately 45 % of authorised drivers are employees at the managerial level, with one-third of the participants being senior executives or the company owners themselves. More than 80 % of the authorised drivers privately own a car. 3.6 % of the authorised drivers in the participating companies use car sharing privately, too. While this figure may seem low, the usage in Aachen as a whole is 0.25 %. Thus the threshold for using car sharing in business appears to be lower for people with prior private experience of car sharing.

According to the project experiences and the results from the interviews, word of mouth is the marketing strategy to choose for winning new customers. Methods with supposedly wide range effectiveness like direct

mail advertising or advertisements in newspapers offer some potential. Information roadshows and telemarketing proved costly and ineffective in generating new business.

Motivation for participation

Apart from a planned change in vehicle use, general, business changes did not lead to an increased readiness to participate in the project. The two main motives for using car sharing were flexibility and the reduction of the high fixed costs of acquisition and running a vehicle, because only variable expenses arise. Thus the offer is especially tempting to newly founded companies and to those who do not want to acquire their own fleet. Companies see an important advantage in being able to fall back on different types of vehicles at the same time, depending on the current business situation. Relatively often ecological motives are mentioned. The firms associate car sharing with the idea of a more ecological mobility and value this additional gain besides cost reduction and increased flexibility (see Figure 3).

The main competition to car sharing is the all-user company car and individuals' own cars used occasionally for business purposes. Companies who use employees' own vehicles for business purposes rarely take advantage of the car sharing offer. Changed general conditions would probably improve the attractiveness of car sharing, e.g. greater insurance restrictions on the business use of personal cars or a modal shift by commuters.

The statements of 129 randomly chosen companies in the vicinity of the car sharing locations in Aachen, Düren and Hückelhoven, who were interviewed by telephone and who had not taken up the car sharing offer, were very informative. Basically, despite being aware of the car sharing publicity, they did not see any business advantage and they gave internal business reasons for non-participation. They use employees' cars for business purposes and/or have enough of their own company cars at their disposal. The actual car sharing offer to companies was seldom criticised. Occasionally, common reservations about car sharing ('too expensive – too inflexible') were expressed.

Table 1: Education attainment of the towns and the Car sharing firms' employees

%	Aachen	Düren	Hückelhoven	Car sharing firms
Secondary school certificate holders	9.5	4.6	3.4	75
Third level graduates	12.9	6.2	3.5	55

Usage behaviour

Altogether 21,433 km were covered by the 153 authorised drivers of the participating firms from June 1998 to February 1999. The average distance travelled per hire period was 60.6 km (although when the one aberrant journey of 2079 km is removed then the average distance is 55.4 km). Given that many separate chores tend to be combined within each domestic car sharing hire period, it is likely that each hire period by businesses was maximised and involved more than one chore.

Approximately one-third each of the journeys was less than 20 km, 20 – 50 km or 50 – 200 km in length. Only 2.8 % of the journeys were greater than 200 km. More than 60 % of the journeys took place predominantly outside town; barely 40 % predominantly inside town. Nearly half of the trips undertaken used vehicles other than the seven project vehicles; in particular, vehicles on hand at the other (domestic/householder-oriented) car sharing stations in Aachen were pressed into service.

The results show that rental cars and taxis sensibly supplement the car sharing offer. The car sharing vehicles were booked for very different periods of use:

- Half of all bookings lasted between 2 and 6 hours;
- 20 % of reservations covered at least one night (a type of booking which competes with the established rental car market);
- the time period of up to two hours (which competes with taxis) was seldom taken up with only 6.5 % of all bookings.

The booking was made in one-third of all cases on the same day as the journey and in half of the cases up to two days before. However, in one-quarter of all cases the vehicle was booked more than one month prior to its use due to a booking subscription in Düren. Approximately two-thirds of the journeys were undertaken by men and about one-third by women. This generally corresponds with their shares amongst all authorised users as well as with the general distribution of men and women in the firms.

Table 2: Distances travelled when car sharing

Journey length	Journeys	%
< 20 km	127	31.9
20 km – 50 km	127	31.9
50 km – 200 km	133	33.4
> 200 km	11	2.8

Two fundamental types of business users responsible for testing the car sharing offer can be distinguished in the participating companies: the ‘intensive users’ and the ‘optional users’ (companies who have not yet or seldom used the car sharing offer, but who do not have any additional costs to bear when participating). A similar picture is shown on the level of authorised users within the companies. Only one-third of all authorised drivers used the car sharing offer within the trial period. A high share of journeys was carried out by only a few companies, with three individuals being responsible for almost 30 % of the bookings and ten people for almost 60 %. Therefore for about two-thirds of participants, the car sharing offer is seen as an expansion of their mobility options.

The average car occupancy, based on 21,433 km driven, amounted to 2.0 persons. This is comparable to that of private car sharing (2.3 persons per private car sharing journey) or to data about the different purposes of car sharing use (1.8 persons when car sharing is used for carrying goods, 2.2 persons when used for official journeys) and is significantly higher

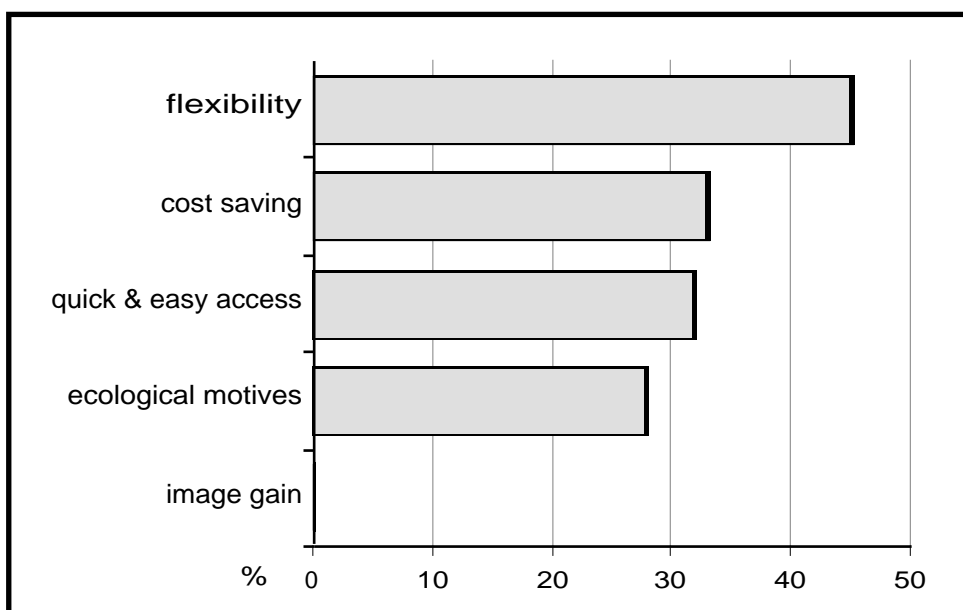


Figure 3: Reasons for using car sharing

Source: Wuppertal Institut, 1999

than the Federal German data of 1.4 persons for general car occupancy and 1.02 persons for business journeys.

The most frequent reason for use, 60 %, was to visit business partners or clients, followed by the transport of goods (official or private) at 29 %. All other reasons were of no great importance with less than 5 % each for all answers. In nearly all cases the use of a car sharing vehicle replaced the use of another car: in 40 % of the cases, a company car; in 28 %, a rental car; and in 20 %, the private car of an employee.

The most important aspect from the viewpoint of the car sharing supplier is the fact that most companies use the vehicles during the day during a time period when demand from householders is low as private consumers exhibit different vehicle demand characteristics. Thus, the vehicles have a higher rate of utilisation and altogether more vehicles can be supplied to all participants in car sharing.

Satisfaction

Both satisfaction with the offer and actual use are very high – from the point of view of the companies as well as from the authorised users. Nearly all (97 %) of the authorised users who responded were very satisfied (55 %) or satisfied (42 %). Only 3 % claimed to be dissatisfied. Differences between the locations could not be analysed. Decisive factors indicating whether the companies were satisfied with the existing offer were the immediate nearness of the car sharing stations, the availability of the vehicles and cost. These aspects were indicated as the most important qualities of the offer, regardless of whether the offer was taken up or not.

When dissatisfaction was expressed, this related first of all to the cost and availability of the vehicles. This must be seen in relation to the main arguments of the project participants: the claims of the participating companies concerning cost reduction and flexibility are high and therefore easy to disappoint. In addition, the car sharing offer is compared with the availability of a company car because only few firms have no car of their own at their disposal.

Only very few of the interviewed companies plan to end the co-operation or to reduce their use of car sharing in the future. Most of them intend to continue to use car sharing to the same extent or even more intensively and are happy to recommend the offer to others. Fleet changes due to project participation have been made by only a few firms, but some companies managed without a planned enlargement of their pool.

Recommendations

Based on the results in Reutter, Böhler & Warmke (1999), the following recommendations for the introduction of an economically efficient external car sharing offer for companies can be made...

1 Urban type

In large towns, the chances of success for the introduction of external car sharing are relatively good; a highly educated workforce, good public transport, a suitable railway connection and a well-tried car sharing offer also have a favourable effect.

2 Types of location

Car sharing stations should be planned to be within easy walking distance (10 minutes maximum) of as many different companies as possible in urban locations with dense, mixed residential and business land use. The more employees who travel to work by non-car modes, the better the chances are of success.

3 Vehicle types

The current cars, that is small cars for short distances and medium-sized vehicles for longer distances, can be offered as available vehicle types for the most important requirements in business transport (visits to clients or business partners and transport of goods); special vehicles, special equipment or prestigious, high-spec motors are not required.

4 Car sharing rates

Car sharing rates are particularly attractive for companies when the basic costs (registration fee, monthly basic costs, safety, collision damage waiver) are as low as possible, when competitive time and kilometre rates for short, regional and medium distances meet business mobility demands, and when co-operative solutions are offered together with other mobility services for long distances (more than 200 kilometres) as well as for short distance urban transport (less than 20 kilometres); e.g. combined use of car sharing, traditional car rental firms and taxis.

5 Booking and payment

Uncomplicated booking (via a call centre and the internet) and account settlement (via technically and logistically feasible onboard computer and chip card reader) should be provided and should be emphasised strongly in the marketing.

6 Marketing campaign

For a marketing campaign aimed at business-to-business car sharing, a preliminary period of about 3 to 6 months should be calculated before the car sharing station is opened; another 3 to 6 months after the opening of the station should be calculated as a

starting period; recruiting local multiples are vital to activate the snowball effect in a naturally cautious business community; contributions to minimise the risks are ideal in the starting period, e.g. by a vehicle manufacturer.

7 Companies to target

Small- and medium-sized enterprises from the service sector, non-profit organisations and various public administration organisations can be approached directly as these are most likely to be interested in external car sharing; newly founded firms are high-potential customers. Companies that have changed location, do not possess a company car or which plan to expand their fleet are worth targeting as well.

8 Target persons in the companies

In companies, decision makers in management, employees responsible for technical support (organisation of official trips or fleet managers) and trade union representatives should be consulted and convinced.

9 Motives of the customers and utilisation behaviour

The two main motives of companies for using car sharing, which suitable marketing should address, are increased flexibility and cost reduction for both frequent and occasional users.

10 Attracting new customers and keeping existing customers

Effectively attracting new customers should be based both on approaching a wide range of interested parties and personal recommendation by existing customers. The vast majority of the companies who took part in the car sharing offer are satisfied with it so there is a good possibility of keeping them as permanent regular customers.

Look to the future

Two substantial conclusions can be derived from the results of the pilot project. Business transport presents a tremendous opportunity for car sharing providers. When the recommendations for a promising car sharing offer are followed, growth rates can increase remarkably compared to the growth rates normally achieved among private householders and the degree of professionalism of the mobility supplier can be enhanced. Companies as car sharing customers improve fleet utilisation, and thereby support and complement the traditional core business of mobility suppliers which, traditionally, is meeting the needs of private householders. As part of modern mobility management for companies, car sharing can – together with other measures – contribute to the efficient organisation of a company's mobility.

References

- Baum, H. & Pesch, S. (1996) 'Car-Sharing als Ansatz zur Verbesserung der Verkehrsverhältnisse in Städten' in *Zeitschrift für Verkehrswissenschaft* 4/96. S. 261-285.
- Bundesministerium für Verkehr (Hrsg.) (1998) *Verkehr in Zahlen 1998* Hamburg, Verkehrs-Verlag.
- Reutter, O., Böhler, S. & Warmke, G. (1999) 'Pilotprojekt Car-Sharing für Betriebe in der Region Aachen' Wuppertal, Wuppertal Institut für Klima, Umwelt und Energie/ Aachen, StadtteilAuto Aachen Car-Sharing GmbH.
- Schütte, F.P. (1997) *Mobilitätsprofile im städtischen Personennahverkehr Schriftenreihe des IÖW* 110/97. Berlin, Deutsches Institut für Wirtschaftsforschung.
- VCD (1997) *Nutzen statt besitzen Flexibel mit Car-Sharing* Bonn, Verkehrsclub Deutschland (Hrsg.)

The Delft Low-Cost Mobility Statement

Jan Herman Koster

Address for correspondence

Mrs T. van der Klis

Low-Cost Mobility Organising Committee, Department of Transport and Road Engineering, IHE Delft, P.O. Box 3015,

2601 DA Delft, The Netherlands

<kli@ihe.nl>

<http://www.ihe.nl>

Abstract

From 21-23 June 2000, some 80 experts gathered at IHE Delft to participate in the World Bank/Velomondial 2000/IHE Delft Expert Group Meeting on Low-Cost Mobility in Sub-Sahara African Cities. The group consisted of politicians, administrators and professionals from African national, provincial and local government levels, NGO representatives, staff from External Support Agencies (ESAs), researchers, consultants and other independent experts. The Proceedings of the Meeting contain the 'Delft Low-Cost Mobility Statement' to which the participants, as individuals, in the Meeting have agreed and committed themselves.

Keywords

Low-cost Mobility, Sub-Saharan Africa, Non-motorised Transport.

Introduction

From 21-23 June 2000, some 80 experts gathered at IHE Delft to participate in the World Bank/Velomondial 2000/IHE Delft Expert Group Meeting on Low-Cost Mobility in Sub-Sahara African Cities. The group consisted of politicians, administrators and professionals from African national, provincial and local government levels, NGO representatives, staff from External Support Agencies (ESAs), researchers, consultants and other independent experts.

The background materials, presented papers as well as the outcomes of the working group sessions conducted during the Meeting, are reflected in the Proceedings of the Meeting. Those Proceedings also contain the 'Delft Low-Cost Mobility Statement', to which the participants, as individuals, in the Meeting have agreed and committed themselves.

The Delft Low-Cost Mobility Statement

We, the participants in the Expert Group Meeting on Low-Cost Mobility in African Cities,

Recognising the importance of personal mobility for economic and social development, and convinced that affordable mobility is on the critical path to sound economic and social development in Sub-

Saharan African Cities, which must include rather than exclude the poor;

Concerned that the already low levels of mobility of the urban poor in African cities will decline further with the rapid rate of urbanisation and prevailing urban mobility policies which tend to ignore the mobility needs of the poor;

Recognising the dominant role of walking and (the potential role of) cycling within African towns and cities;

Convinced that more efficient and safer walking and cycling positively contribute to poverty alleviation, economic development, health improvement and environmental protection;

Referring to Article 150 of the Habitat II Global Plan for Action, which reads:

'Non-motorised transport is a major mode of mobility, particularly for low-income, vulnerable and disadvantaged groups. One structural measure to counteract the socio-economic marginalization of these groups is to foster their mobility by promoting these affordable, efficient and energy-saving modes of transport';

Also referring to article 7.53.c of Agenda 21, which commits governments to 'encourage non-motorised modes of transport by providing safe cycle-ways and foot-ways in urban and suburban centres in countries, as appropriate';

Recognising that these modes have been marginalised in planning, infrastructure provision and traffic management in many African towns and cities, which has resulted in economic losses due to inefficiencies, in economic and social exclusion, and in high economic costs and human suffering as a result of traffic accidents;

Having taken note of the important findings of the Sub-Sahara Africa Transport Programme's Pilot Project on Non-Motorised Transport (SSATP/NMT), which, in summary, are that the mobility and traffic safety of the majority of urban inhabitants can be enhanced substantially through the application of a menu of low-cost and straightforward interventions which yield high investment cost/benefit ratio;

Call upon African national, provincial and local governments, civil society and all other relevant parties, including ESAs, to support and implement the following actions:

Actions at National & Local Levels

1 Awareness raising

A major stumbling block in realising efficient and affordable mobility in African cities is the lack of awareness amongst politicians, administrators and professionals at national and local levels of the benefits of low-cost mobility options. In order to restore a balance in, and increase the efficiency of the urban transport systems, national awareness raising strategies will need to be developed and implemented. These should target politicians, administrators and professionals at the national and local level, and aim at raising their awareness of the economic and social importance of mobility, of the major role of walking and (the potential for) cycling, of the current inefficiencies of the urban transport systems as regards these modes, and of the ways and means to enhance low-cost mobility.

2 Mainstreaming low-cost mobility

Low-cost mobility has a direct relationship with, amongst others, poverty alleviation, economic and social development, employment generation, urban upgrading and development, and environmental protection. Rather than developing stand-alone low-cost mobility policies, national and local governments are urged to integrate low-cost mobility in policies, strategies, programmes, plans and projects that address these issues.

As walking and cycling are an important part of the wider urban transport systems, they should be treated as such. For this reason, national and local governments are urged to include these modes into mainstream urban transport policies, strategies, programmes, plans and infrastructure investment projects. In addition, the requirements for efficient and safe walking and cycling should be included in national urban roads design standards. The draft document 'Productive and Liveable African Cities: Guideline for Pedestrian and Bicycle Traffic' includes relevant proposals for such standards.

3 Stakeholder participation

As is the case in other sectors, stakeholder participation is crucial in the preparation and implementation of sound and equitable policies, strategies, programmes, plans, and projects. National and local governments are urged to credibly involve, as a major group of stakeholders, pedestrians and cyclists in any decision-making process which directly or indirectly relates to their mobility and

traffic safety requirements. In doing this, they should pay particular attention to the mobility needs of women, which are particularly affected by inappropriate urban transport solutions.

4 Demonstration projects

Although the validity and applicability of the findings of the SSATP/NMT Pilot Project are beyond doubt, they are based on a limited number of isolated engineering and cycling promotion pilot interventions. The consistent application of the 'menu of interventions' as an output of the pilot project at a large scale, and the monitoring and dissemination of the results thereof, will greatly help in raising awareness of the importance of efficient and safe walking and cycling, and in convincing politicians, administrators and professionals at the national and local levels, as well as the public at large, that this efficiency and safety can be greatly increased at relatively limited costs. For this reason, national and local governments are urged to plan and implement, at city or district level, a number of such demonstration projects in a number of countries, and to disseminate the results within Sub-Saharan Africa.

5 Local application

Independently of, and in parallel with these demonstration projects, local governments can and should make a start with addressing the mobility and safety needs of pedestrians and cyclists, whenever and wherever possible. In doing this, the guidelines produced under the SSATP/NMT Pilot Project are a useful tool, as is the exchange of experience through the network of experts on low-cost mobility.

6 Human resources capacity building

It is recognised that professional leadership capacities (urban planning and management, transport planning and management) are well below what is required, both in quality and in numbers, to prepare and implement sound and equitable low-cost mobility policies for the fast growing African towns and cities. This has undoubtedly contributed to the near exclusion of the requirements of pedestrians and cyclists in urban transport and land-use policies and infrastructure investments. National governments are urged to redress this situation, by providing relevant education and training opportunities, as well as attractive employment conditions, for professionals involved in urban mobility at the national and local levels.

In addition, current relevant university level curricula should be upgraded to reflect current thinking about (low-cost) urban mobility, in order to better prepare graduates for their tasks.

Actions at the International Level

7 *Mainstreaming low-cost mobility*

ESAs are urged to integrate low-cost mobility in their current and future aid policies and to promote its application in national and local strategies, plans, programmes and projects which they support and which aim at poverty alleviation, economic and social development, employment generation, urban development and upgrading, and environmental protection.

They are also urged to provide technical and financial support (both grants and loans) to urban transport plans and projects only if these do justice to the importance and major modal share of walking and (the potential for) cycling in African cities.

8 *Support to demonstration projects*

The identification, preparation, execution and monitoring of local demonstration projects (see 4. above) will require outside technical and financial support. In this connection, the Low-Cost Urban Mobility Demonstration Programme proposed under the UNCHS Sustainable Cities Programme is a relevant initiative, which qualifies for support by ESAs.

9 *Support to human resources capacity building*

As in many instances existing human resources at the professional level are either very weak or non-existent, national governments will require external support in building human resource capacities and in upgrading relevant university curricula. In view of limited resources and in order to promote regional networking and knowledge sharing, the establishment of a regional 'Centre of Excellence' should be seriously considered. Such a centre could develop and provide training of trainers courses, post-graduate education modules and programmes and assistance to universities in the upgrading of curricula, staff development and strengthening of the related educational/training infrastructure. This

Centre could also serve as the coordination unit for a Network of Experts on Low-Cost Mobility which would disseminate experiences and promote exchange amongst professionals working in this field.

10 *Further pilot work and dissemination under SSATP*

The SSATP/NMT Pilot Project has delivered valuable lessons which are applicable in a large number of situations. Nevertheless, more coordinated pilots should be carried out. The supporters of the SSATP are urged to include a follow-up NMT Pilot Project for additional interventions in its programme of activities.

The SSATP is also urged to put in place a programme for much wider dissemination of the findings of the SSATP/NMT Pilot Project, as well as those of follow-up pilot activities and the proposed demonstration programmes.

In order to fulfil these activities and to do justice to the crucial role of non-motorised transport in African cities, the SSATP is also urged to ensure that low-cost urban mobility remains a recognisable element within this important initiative.

As participants in the Expert Group Meeting, we commit ourselves to promote the proposed actions, to actively strengthen the network that the Meeting has helped to establish, to keep each other informed of successes and failures in implementation activities, and to meet again in the year 2005 to take stock of progress and to update the plan of action.

Delft, The Netherlands

23rd June 2000

Note

Participation in the Meeting was on a personal basis. Views expressed in this Statement, although supported by the Meeting participants, may not necessarily be shared by their respective organisations.

Social change & Leisure Mobility

Martin Lanzendorf

Address for correspondence

Martin Lanzendorf

Universiteit Utrecht, Faculty of Geographical Sciences, Department of Urban Geography, P.O. Box 80 115, NL-3508 TC Utrecht, The Netherlands

<m.lanzendorf@geog.uu.nl>

Abstract

Social change, leisure interests, available time and access to transport greatly influence leisure mobility. However, it is relatively unresearched. This paper sets out to clarify the subject and presents research on leisure mobility. Some results of a survey on leisure mobility in Cologne are discussed and some remarks on potential comparative European and North American research are made.

Keywords

Leisure mobility, life styles, social change, time availability, transport access, urban form.

Introduction and background

Social change, leisure, transport and sustainability are subjects of several scientific disciplines. To understand the complex interactions which influence leisure mobility, it is necessary to extend disciplinary boundaries so that they overlap and complement each other. Before going into detail, some preliminary remarks need to be made in order to clarify the subject and why the present research on leisure mobility is so important. Subsequently, both the aim and the first results of a survey on leisure mobility in Cologne are discussed. Finally, some concluding remarks on potential comparative European and North American research are made.

It is important to begin by outlining the following points:

(1) When talking about sustainable transport and the negative ecological impacts of transport, we need to include aspects of climate change, fuel consumption, air quality, noise, land waste, health, and urban life quality.

In order to improve the sustainability of current transport systems, we need to talk about:

- ways to reduce travel distances of individuals, and
- ways to induce people to employ more sustainable modes of transport (for instance, by reducing car dependency).

(2) All policy and technology approaches need to be accompanied by individual behaviour investigation in order to develop present transport systems, little by little, towards sustainability.

We have to understand the individual's travel behaviour to be able to explain the relationship between social change, spatial structures and use of transport.

(3) Western, (post-) industrial countries change dynamically. Modernisation processes, individualisation and globalisation are some keywords for these social changes. In the individual's life, leisure time seems to be more important now than it ever was before. This development is likely to continue in the future.

(4) Throughout this paper, leisure will be defined as time available at the individual's disposal, that

(4) Throughout this paper, leisure will be defined as time available at the individual's disposal, that

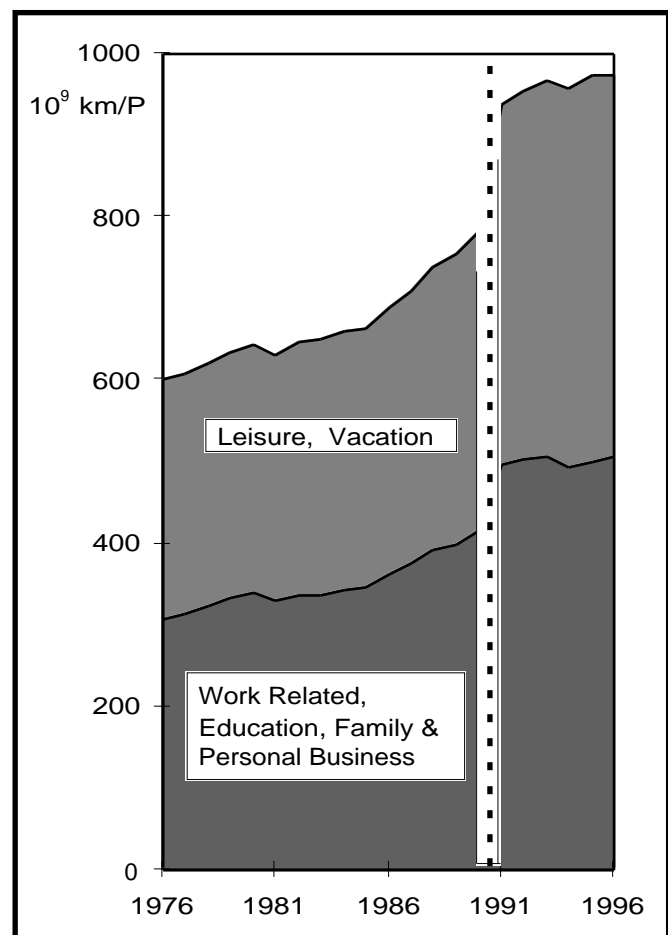


Figure 1: Kilometres travelled per person, Germany, 1976–96

Source: *Verkehr in Zahlen 1998*

is to say free of obligations such as work, family, personal business or physical regeneration.

People travel long distances for leisure or vacation purposes. For example, 48 % of all person kilometres in Germany in 1996 were consumed by leisure or holiday purposes (Bundesministerium für Verkehr, 1998). In the U.S. about one-third of all distance travelled was used for social or recreational purposes (Oak Ridge National Laboratory, 1999).

When considering the development of the last decades, we can clearly see the important impact leisure transport had in the past and will most probably continue to have in the future (Figure 1). Yet, there does not exist any substantial literature on leisure transport. Investigations on specific trip purposes concentrate on commuter trips or in some cases on shopping trips. Nevertheless, in recent years scientific interest in leisure transport has grown and in several European countries research has been initiated.

(5) Mobility is much more than travelling from point A to B. Three dimensions of mobility can be distinguished:

- the spatial (from A to B),
- the socio-economic (i.e. the purpose), and
- a symbolic/expressive dimension where attitudes and lifestyle elements are expressed in transport modes, car types, etc.

In leisure time the symbolic dimension of mobility is particularly important. Discussions about changing the individual's choice of transport mode will have to consider the expressive dimension of leisure mobility.

(6) In contrast to journeys for most other transport purposes, individuals usually do not choose the shortest route or the most economic transport mode to reach a leisure destination. Frequently, the trip itself is an important component of the leisure activity and individuals simply want to enjoy driving, riding or walking, etc.

Some leisure activities even exist (such as walking/hiking, running, cycling and driving around by car) where the mere pleasure of movement without ever intending to reach a specific destination.

Table 1: Types of leisure trips by purpose

- visiting friends and relatives
- recreation and enjoying nature
- activities at leisure facilities
- walking or driving with no specific destination

Source: Lanzendorf, 1998

Case study on leisure mobility in Cologne

In 1997, a research group sponsored by a grant from the German Federal Environmental Agency conducted a survey on leisure mobility in four Cologne neighbourhoods (Figure 2). A total of 949 inhabitants, who were representative of the adult German population, were invited to complete a questionnaire and, in addition, to fill out a diary of all trips conducted during the preceding weekend. Because of the generally wide temporal and spatial distribution of leisure trips and given that most leisure distance is consumed at weekends on short trips lasting one day or less, we restricted the survey to weekends only.

The overall objective of the leisure mobility research in the Cologne area is to find policies and solutions for a more sustainable transport system. To achieve this, we need a better understanding of individual leisure transportation behaviour. The key questions are as follows:

- What leisure activities require long distances to be covered? Of all trip purposes, is the term 'leisure' a useful category or should we search for more appropriate sub-categories?
- Is it possible to explain trip frequencies, distances covered and the choice of transport modes in leisure mobility by attitudes, lifestyles, socio-economic and/or spatial structures?
- What can we learn of an individual's travel choices (choices for specific leisure activities, distances and modes of transport)?
- What policies do we need to make mobility more sustainable?

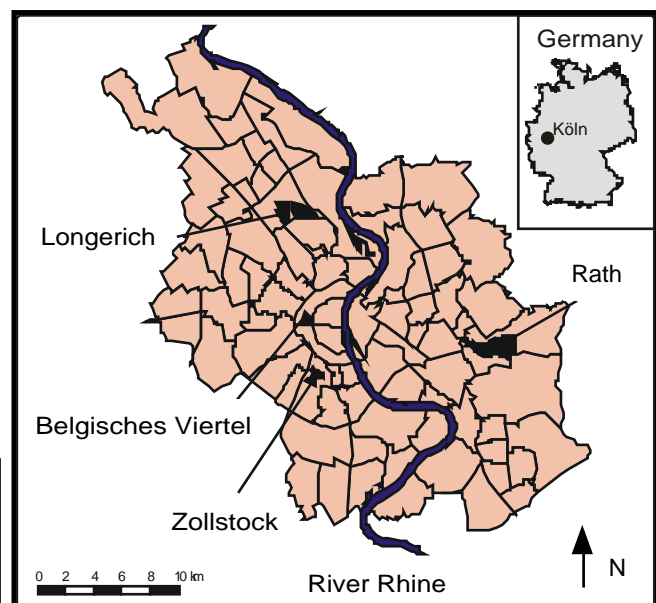


Figure 2: Location of Cologne districts questioned about leisure mobility in 1997
Source: Lanzendorf, 2001

Some results from the case study in Cologne

Structure of leisure trips

Leisure transport is a term for activities covering a broad time-space differentiation. There is little hope of achieving a good understanding of leisure transport without subdividing the phenomenon into more specific classifications. Table 1, therefore, shows the classifications where long distances are covered, while Figure 3 provides a breakdown. These classifications of leisure mobility can be a good starting point for further research.

Spatial structures

What influence does spatial structure have on leisure mobility? Recent research emphasises that garden owners or, more generally, people living in attractive residential neighbourhoods, cover less distance for leisure mobility. Other publications argue that suburban or urban settlement structures influence leisure mobility (Kagermeier, 1997, Holz-Rau & Kutter, 1995, Fuhrer *et al.*, 1993).

Comparing the distances covered by the population in the Cologne neighbourhoods Belgisches Viertel and Rath (Figure 4), we observe significant differences: the inhabitants of the Belgisches Viertel cover less distance for leisure facilities and visits to friends and relatives, whereas the distances covered for spending time in the countryside are less for the population from Rath. The spatial structure of the two neighbourhoods can yield an explanation for this. The Belgisches Viertel is a gentrified, attractive, inner city area close to the

town centre with high population density and a lot of adjacent leisure facilities such as bars, theatres, cinemas, etc. Rath, in contrast, lies on the outskirts of Cologne, close to an attractive recreational area, the Königsforst. Rath is a neighbourhood with low density population, predominantly detached houses with gardens and few leisure facilities. Both neighbourhoods have access to the tram system.

Mobility styles

During the last decade lifestyle research has broadened our understanding of individual behaviour. Individual attitudes, beliefs, values and leisure activities are some of the wide variety of factors used to describe the structure of individual lifestyles. Hence, mobility is more than moving from point A to point B to fulfil any purpose. A symbolic, intrinsic dimension of mobility exists, and this is particularly important in leisure mobility. The Cologne questionnaire asked for:

- attitudes towards general leisure values;
- frequent leisure activities; and
- attitudes towards several modes of transport for Sunday trips (car, bus/train, bicycle and walking).

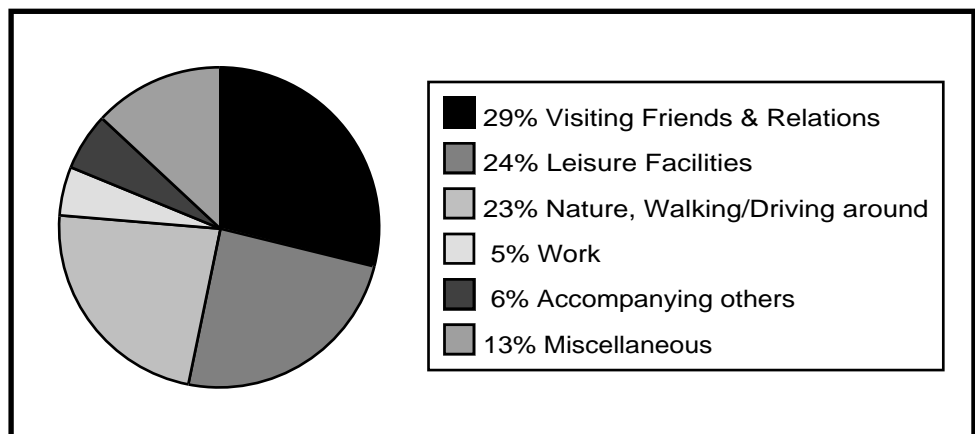


Figure 3: Trips by purpose (excluding homeward bound journeys) in 4 Cologne neighbourhoods, 1997.

Source: Lanzendorf, 2001

Table 2: Description of traditional and urban mobility style

Leisure activities and attitudes	Traditional activities at home reading, theatre	Independent, Urban movies, going out, computer few family- or garden-related
Mobility attitudes	positive attitudes toward cycling, walking & public transport transportation costs are important	no preferred mode 'rational' transport user (low intrinsic values)
Others	older than average	young, 'urban' attitudes

Source: Lanzendorf, 2001

By using several techniques of factor and cluster analysis, six ‘mobility styles’ were established which reflect leisure and mobility attitudes. Table 2 compares two of these styles: a traditional and an independent, urban mobility style. Compared with the traditional style, the urban mobility style has more trips for leisure facilities and visits to friends and relatives, and fewer trips for spending time in the countryside or walking/driving around without a specific destination.

Evidently, any further research has to consider the interactions between mobility styles and spatial structures. For instance, more urban mobility style people live in the inner-city neighbourhood Belgisches Viertel than in Rath. The contrary is true for the traditional mobility style.

Summary and further hypothesis

So far, two results of the study are outlined: first of all, we should subdivide the category ‘leisure transport’ into more comprehensive classifications (see Table 1); and secondly, spatial structure and mobility styles should both be part of any explanation of individual travel behaviour.

One further hypothesis is that a close and dynamic relationship exists between social change and leisure activities. This will affect the future development of leisure transport.

In regard to policy issues, another hypothesis of the study is that the introduction of car-reduced or car-free living areas in cities could be an important step to change our current transport system. Yet, the transport demands of leisure, for instance on weekends or holidays, are the reason why many people choose to own a car.

European and North American profiles of future potentially comparative leisure mobility research

From the Cologne study the idea arises to compare leisure mobility in Europe and North America. This would yield new insights into the interactions between spatial structures, individual attitudes or lifestyles and travel behaviour:

- (1) A comparison of research literature on European and North American leisure mobility could allow a new recognition of the interactions between urban structures, lifestyles and leisure mobility. A transdisciplinary approach would be necessary to include all existing, disciplinary knowledge. The completion of such a study would help to fill a void in the field of contemporary transport research.
- (2) The relationship between social change (as indicated by different types of lifestyle and leisure time activities) and leisure mobility

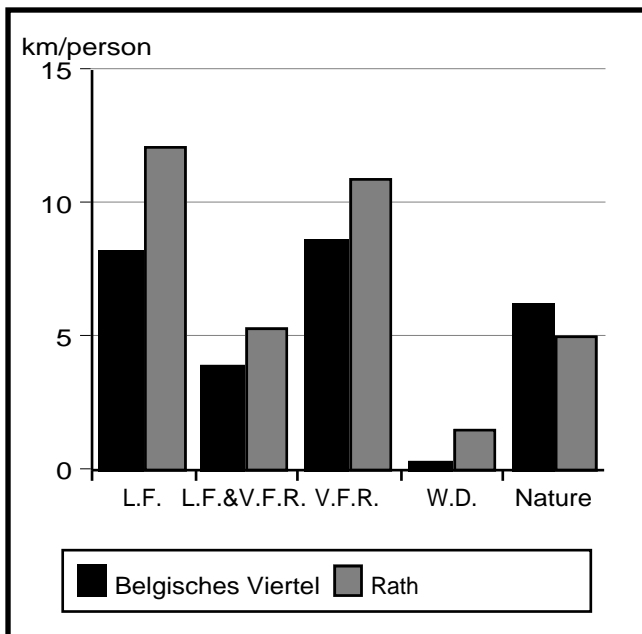


Figure 4: Leisure person kilometres on Sundays by residential area (trip chains) in 2 Cologne neighbourhoods, 1997

Legend: L.F. = Leisure Facilities
 V.F.R. = Visits to Friends & Relatives
 W.D. = Walking/ Driving around

Source: Lanzendorf, 2001

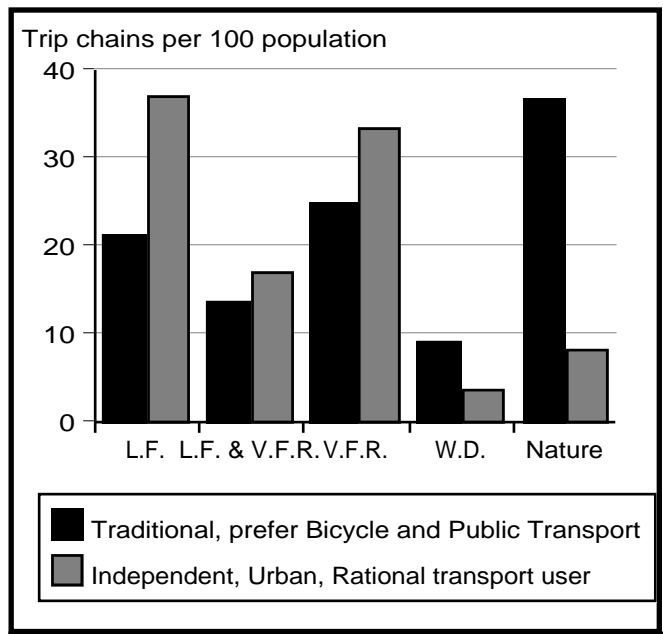


Figure 5: Leisure trip chains on Sundays by mobility type in 4 Cologne neighbourhoods, 1997

Legend: L.F. = Leisure Facilities
 V.F.R. = Visits to Friends & Relatives
 W.D. = Walking/ Driving around

Source: Lanzendorf, 2001

should be compared internationally. Presuming that lifestyles in western, (post-) industrial countries converge (or at least develop similarly), it is possible to establish indicators for the purpose of forecasting future trends in leisure mobility in different countries, particularly in Europe.

Some questions that could be dealt with and answered by a comparative study include:

- For which activities do people in North America and Europe cover long distances in leisure time?
 - What differences exist and why?
 - What can we learn from these differences in view of a more sustainable transport system?
- Are there any differences in mobility-styles and lifestyles between continents?
 - Supposing Europeans would develop towards American styles: what would be the consequences in terms of leisure travel distances covered in Europe?
- What can we learn from modelling travel behaviour?
- How will leisure mobility develop in the future?
- What are the interactions between lifestyles, land use and leisure travel patterns?

Acknowledgement

This paper was presented at the conference on Social Change and Sustainable Transport, Berkeley, CA, March 10-13, 1999 while the author was based at the Wuppertal Institute.

References

- Bundesministerium für Verkehr (1998) *Verkehr in Zahlen 1998* Verkehrs-Verlag, Hamburg.
- Fuhrer, U., Kaiser, F.G. & Steiner, J. (1994) *Multilokales Wohnen. Freizeitmobilität als räumlich 'verteiltes' Wohnen* Bericht 60 des Nationalen Forschungsprogramms 25 Stadt und Verkehr, Zurich.
- Holz-Rau, C. & Kutter, E. (1995) *Verkehrsvermeidung. Siedlungsstruktur und organisatorische Konzepte* Materialien zur Raumentwicklung 73. Bundesforschungsanstalt für Landeskunde und Raumentwicklung, Bonn.
- Kagermeier, A. (1997) *Siedlungsstruktur und Verkehrsmobilität. Eine empirische Untersuchung am Beispiel von Südbayern* Vertrieb für Planungsliteratur, Dortmund.
- Lanzendorf, M. (1998) 'Freizeitmobilität als Gegenstand der angewandten Umweltforschung' in *Geographische Rundschau* 50, 10: 570-574.
- ____ (forthcoming 2001) *Freizeitmobilität. Unterwegs in Sachen sozial-oekologischer Mobilitätsforschung* PhD Dissertation am Fachbereich VI der Universität Trier.
- Oak Ridge National Laboratory (1999) *Summary of travel trends. 1995 Nationwide Personal Transportation Survey* (<http://www.cta.ornl.gov/npts>)

Professional training needs for sustainable transport: a case study of those responsible for planning for cycling & walking in the UK

Hugh McClintock

Address for correspondence

Hugh McClintock

Institute of Urban Planning, School of the Built Environment, University of Nottingham, Nottingham NG7 2RD, U.K.

<Hugh.McClintock@nottingham.ac.uk>

Abstract

This paper discusses the results of a survey in the UK to assess the training needs for those involved in the planning, promotion and delivery of policies to encourage walking and cycling. It describes the background to the study it commissioned to help assess the needs of those already working in this field and the lessons arising for improving training, its conclusions and implications.

Keywords

Cycling, Walking, Professional Training, Technical Guidance, Policy-making and implementation, Dissemination.

Introduction

Adopting and implementing more sustainable transport policies has very important implications for the professional training requirements of those involved in their planning, delivery and promotion. Meeting this challenge effectively is important both for those coming into areas such as planning for pedestrians and cyclists from more traditional fields of planning and transport activity and for those at the outset of their careers. Considering how best to meet these challenges poses a number of inter-related questions. Such questions include the following:-

- What are the principal sources of information on technical guidance and best practice used by walking and cycling planning practitioners?
- What is the influence of these sources, and the presentation of any research results on which they may be based, on the uptake by practitioners?
- Why do some practitioners, but not others, change their practice in response to research findings and new technical guidance becoming available?
- What use is made of research-based evidence by policy makers at local and national levels?
- How far do practitioners look to central and local government sources of guidance, or ones from elsewhere, for example academic and other research institutions, professional organisations,

consultants and pressure groups?

- How can we draw more efficiently on the knowledge and experience of users?
- What barriers appear to obstruct effective knowledge flows?
- What educational strategies are needed for both university courses (full-time and part-time) and continuing professional development to promote the implementation of research findings?
- How do those working in such areas attempt to keep abreast of relevant guidance and research findings that contribute to the ever-expanding stock of relevant knowledge and of how best can they be enabled to make use of and act on this?
- How do we improve the effective dissemination of the knowledge of those with experience in these areas, both formally and informally?
- What is the role in improving dissemination of electronic as well as printed sources and how should these best be organised and maintained and by whom?

This paper discusses a study that casts some light on this topic in planning for pedestrians and cyclists. Before introducing the survey and its results, the changing context and policy background is first discussed.

Background: increased importance of cycling & walking policies in the UK

The UK National Cycling Strategy (NCS) was published in 1996. The NCS recommendations, based on the work of four specialist working parties with wide representation, set a target of doubling cycling by 2002 and doubling it again by 2012 (Department of Transport, 1996). In 2000 the DETR's 10-Year Transport Plan refined this into a new target, to treble the number of cycling trips from their 2000 level by 2010 (DETR, 2000a).

Several of the recommendations of the NCS required detailed follow-up work, to be carried out under the auspices of the National Cycling Forum, set

up to take the strategy forward and monitor progress in implementing its recommendations. The recommendations on the need to review professional training resulted in the establishment of a special working party, to report back both to the National Cycling Forum and to the proposed Walking Steering Group, linked to work on parallel guidance on walking (DETR, 2000b).

Working party on professional training and technical guidance

The Working Party's terms of reference were to:

- Consider the training and technical information needs of professionals engaged in providing for cyclists and pedestrians; the incorporation of cycling and walking within the wider development and planning processes; and the promotion of cycling and walking issues, including conveying messages to senior staff;
- Propose actions that would improve the range and quality of professional training; and
- Identify any significant gaps in the flow of technical and professional knowledge.

The group first met in May 1998. It has reviewed training needs both for those already actively involved in planning for cyclists and pedestrians, those coming into such work from related planning and transport activities and also those coming through higher education and other educational routes who might be interested in developing this kind of specialism (Gercans, 1999).

Since the 1980s several local authorities have appointed their own specialist cycling/walking officers but it seemed that they had in most cases acquired relevant knowledge and skills on the job rather than through any dedicated training other than occasional attendance at relevant meetings and conferences.

In terms of cycling, as opposed to walking, the group soon became aware that there was quite an extensive amount of relevant literature available covering cycle infrastructure and closely related fields like traffic-calming, safer routes to school projects, green travel plan development, travel behaviour education and awareness raising. An early priority of the group was to assess the state of knowledge and information gaps and to produce a consolidated list of relevant documentation from a wide variety of sources.

Survey of professional training needs

It was also realised that relatively little was known about how those already engaged in planning for cycling and walking had acquired relevant skills and knowledge or indeed what skills they thought were important to do this work or how best to keep them up to date. It was therefore decided to commission a survey, from consultants Oscar Faber, to gather fuller information on these topics and to help make recommendations.

Oscar Faber were chosen because they had recently been involved in work for the DETR on compiling a Cycle Initiatives Register. Through this they had compiled relatively fresh information on relevant contacts.

The objectives of the study were to:-

- assess the need for education and vocational training for cycling and walking professionals;
- identify gaps in technical and professional knowledge;
- assess the level of provision for education and training that already exists; and
- propose actions to improve the range and quality of professional training

Table 1: Methods of keeping abreast of technical guidance/research in cycling

	(Cycling officers) (Base=68)	Cycling/walking officers (Base=123)
Articles in magazines/journals	34%	36%
DETR Traffic advisory leaflets	32%	29%
Attendance at conferences/seminars	10%	7%
Research reports	3%	2%
The internet	-	1%
Word of mouth	3%	3%
Technical standards	2%	1%
Other	2%	3%

Source: Oscar Faber, 1999, Table 4.5, p. 9

The survey, carried out in 1999, produced a response rate of 61%, i.e. 214 respondents, yielding much important information to feed into the conclusions of the work of the group. The respondents included local government officers, consultants, and others responsible for promoting green transport plans for employees. In both cases the top three most frequently mentioned responsibilities were developing transport strategies, planning of cycle networks/facilities and the coordination of projects/schemes. The survey also showed that more than two-thirds of the respondents expected to develop their existing roles as cycling and walking practitioners.

Professional development was achieved largely through magazine and journal articles, with very little use of the Internet. DETR Traffic Advisory leaflets were regarded as being an important reference source, assisting directly in developing Traffic Management/engineering skills and generally with 'on the job' training (see Table 1).

When asked about the skills that they considered important in the planning, delivery and promotion of cycling and walking 'understanding the needs of cyclists and pedestrians' came out as particularly important, along with traffic management/engineering skills and planning and strategic skills such as links between land use and transport (see Table 2).

When asked about knowledge gaps respondents particularly identified user needs awareness and marketing skills. Over a third of respondents identified demand forecasting and monitoring as areas where they needed further knowledge and cycle audit and cycle review techniques were also felt to be an important knowledge gap in the case of cycling. A higher proportion of those who had responsibility for both walking and cycling, or just walking, believed that there was a knowledge gap in terms of 'understanding the needs of disabled road users' and

'technical design issues' in both the fields of cycling and walking (see Table 3).

59% of those involved in cycling did not feel that there was adequate provision of training in their field. Awareness of the needs of cyclists and pedestrians featured most prominently in the response on types of vocational training needed (see Table 4).

Conferences, seminars and evening meetings were courses used by 138 of the 214 respondents, with 93 mentioning the Local Authority Cycle Planning Group. However, the importance of on the job training was also made clear. Correspondence training, however, received the lowest priority.

Conclusions from the survey and some implications

With work on the National Walking Strategy only starting some time after work on the National Cycling Strategy, and with less lobbying from pedestrian than cycling groups, it is not surprising that awareness of the relevant knowledge and skills required for promoting walking is very limited. However, the survey findings also made clear that this awareness for cycle planning is also low, despite some central and local government commitment to cycling going back to the late 1970s and much wider interest since the mid-1990s. A variety of skills are needed by those professionals including planning, design, management and marketing abilities.

It seems that the number of higher education departments with some involvement in walking and cycling-related courses is quite large but that they usually form only quite a marginal element of courses, whether full-time or part-time and whether degree courses or short courses. Relevant courses including Architecture, Landscape Architecture, Environmental Management and Geography as well as Town Planning, Urban Design and Civil Engineering are the disciplines that appear to be best represented in those professionally active. However, it is clear that

Table 2: Skills important to cycling & walking professionals (total sample)

	Important to cycling (base = 214)	Important to walking (base = 172)
Understanding the needs of cyclists, pedestrians and other road users	96%	95%
Traffic management/engineering skills	47%	38%
Planning and Strategic issues such as links between land use and transport	41%	43%
Awareness of road safety issues	43%	44%
Awareness of integrated transport issues	31%	33%
Promotional/Marketing skills	30%	27%
Other	5%	5%

Source: Oscar Faber, 1999, Table 4.7, p. 13.

professionals in the field have different training backgrounds and qualifications.

The importance of wider avenues to acquiring relevant skills was also recognised by the group including the system of National Vocational Qualifications (in Scotland Scottish Vocational Qualifications) and the need was recognised for a fairer and more consistent means of obtaining skills so that those from non-traditional backgrounds can progress. It is clear that NVQ/SVQs cover various aspects of training that relate to cycling (and walking) issues but might need to be expanded, in particular to address marketing.

One lesson from the work of the group has been to understand how much cycling and walking interact with other issues, not only wider transport policy and traffic management but also air quality and health issues and other important policy areas such as urban regeneration and urban design. Relatively little is known about some of these interactions, e.g. urban regeneration, but urban design is clearly a very important way of achieving more livable cities that will encourage walking and cycling, carefully linked to policies designed to reduce the impact of traffic.

The new transport agenda since the publication of the Integrated Transport White Paper (DETR, 1998) has thrown up a number of challenges to employers and trainers to reorient training and skills development. The requirements for planning for cycling and walking need to be seen in this wider context in which the development of travel awareness

and marketing alternatives to the car seem to be of key importance.

There is a need for potential employers to forge links with higher education institutions through the professional bodies since improved linkages should result in better training and skills development. This would help to ensure that those who fund higher education ensure that the training of professionals to provide for walking and cycling are included as core mandatory subjects in those degree courses of particular importance, as well as getting involved in providing short courses.

It seems that there are now a few cases of cycle planning issues being brought into A-level courses in secondary schools. The Working Group felt that this development should be encouraged since it provides an excellent opportunity to ensure that newcomers to the profession understand the key issues involved and, at an early stage, are interested in the possibility of developing this kind of specialism. With the help of the relevant professional institutions the group has produced a leaflet to encourage this trend by making people aware of the different routes available for a career in cycling and walking promotion.

As well as thinking about these medium-term and longer-term challenges there is a need in the short-term to give careful thought to improve the training and skills upgrading and maintenance of those in the field. This includes some people who have been actively involved for some years, with extensive experience and commitment, and others who have

Table 3: Knowledge gaps in cycling & walking professionals (total sample)

	Knowledge gaps in cycling	Knowledge gaps in walking	Knowledge gaps in cycling & walking
Understanding the needs of cyclists (and pedestrians) and other road users	43%	45%	79%
Forecasting cycle/walking demand	42%	47%	79%
Promotional/marketing skills	37%	39%	67%
Monitoring cycling / (walking)	31%	40%	61%
Technical design issues	35%	24%	44%
Understanding the needs of disabled road users	15%	27%	36%
Traffic management/Engineering skills	17%	15%	29%
Cycle audit/Cycle review techniques	37%	-	37%
Awareness of safety	10%	12%	19%
Project management	15%	13%	25%
Understanding the needs of drivers	2%	2%	4%
Other	3%	-	3%

Source: Oscar Faber 1999, Table 4.8 on page 17

become involved only recently as work in more traditional areas of transport planning and traffic management, such as road building and road-widening, has declined.

In the case of cycling much more than walking, as the Oscar Faber survey confirmed, extensive information is available and the problem appears to be more one of ‘information overload’ for those involved. They need to be assisted to identify the most useful, up to date and relevant sources of guidance. This is particularly important not just for the increased policy importance of cycling and walking, and increases in funding available, but because it is also clear that many practitioners undertake little training while in their employment, despite the increased importance in recent years of Continuing Professional Development by many professional organisations.

The two problems may be cumulative in their effects since a decline in resources for training and information gathering may well mean that those involved are less likely to be aware of current information and guidance. Both problems may stem from a continuing lack of awareness by some senior officers in local government of the need to provide adequate infrastructure for cycling (and walking) as well as marketing initiatives. On the other hand, knowledge of courses available may for some be less of a problem than the geographical disparity in access courses, making the cost of going to courses that are available that much more of a deterrent.

In some cases it is clear that the understanding of the importance of providing for cyclists and pedestrians and how to do it, has been sidelined in the organisation, with the knowledge confirmed to one ‘Cycling officer or ‘Walking Officer’, or joint

‘Cycling/Walking Officer’, often at a relatively low grade, and not ‘spread around’. How best to encourage a wider understanding in the organisation is a key challenge. This may be encouraged by the development of specific tools such as modelling, evaluation, audit and level of service review techniques which can add to the ‘respectability’ with which cyclists and pedestrians are viewed.

References

DETR (1998) *A New Deal for Transport: Better for Everyone – The Government’s White Paper on the Future of Transport* Department of the Environment, Transport and the Regions, Cm 3950, The Stationery Office, London.

____ (2000a) *Transport: the 10-Year Plan* Department of the Environment, Transport and the Regions, London, July, and on the DETR website at: <http://www.detr.gov.uk/trans2010/plan/>

____ (2000b) *Encouraging Walking: Advice for Local Authorities* Department of the Environment, Transport and the Regions, Wetherby.

Department of Transport (1996) *National Cycling Strategy* HMSO, London.

Eclipse Research Consultants (1998) ‘Sustainable Cities Programme Review Summary: Management audit of the Sustainable Cities research programme’ Eclipse Research Consultants, Cambridge, for the Engineering and Physical Science Research Council, Swindon.

Gercans, R. (1999) ‘Getting Research Results Into Practice’ Proceedings of the VeloCity ’99 Conference, Graz, Austria, April, (Semaco, Salzburg).

Oscar Faber (1999) *Department of the Environment, Transport and the Regions: UG231 – Cycle Initiatives Register – Professional Training Extension* Final Report, Oscar Faber, St. Albans.

Table 4: Types of vocational training needed to support cycling & walking professionals (total sample analysis)

	Training in cycling (Base = 212)	Training in walking (Base = 168)
Awareness of issues / needs of cyclists and pedestrians	61%	66%
Marketing / Promotion of cycling / walking	51%	47%
Develop local cycling / walking strategies	45%	49%
Formal qualifications e.g. NVQ, degrees	19%	19%
Technical aspect of design/Design standards	38%	32%
Safety auditing	28%	29%
Project management / Public Consultations / Consensus building	44%	43%
Other	4%	2%

Source: Oscar Faber, 1999, Table 4.10, p. 21

The German Marshall Fund Environmental Fellowship Program

An exchange Program on Approaches to Integrated Transportation, Land Use and Air Quality Policy that offers Short-Term Fellowships for Environmental and Transportation Professionals

The German Marshall Fund of the United States (GMF) is an independent U.S. foundation created to serve the transatlantic community. GMF's mission is to deepen understanding, promote collaboration and stimulate exchanges of practical experience between Americans and Europeans, particularly those in the national and local policy community. GMF was created in 1972 by a gift from the German people as a memorial to post-war Marshall Plan aid.

As part of its larger environmental program the GMF sponsors again in 2001 short-term fellowships for American and European environmental professionals to travel across the Atlantic Ocean to learn first-hand about policy formulation and implementation. A principal purpose of the fellowship program is to build long-term linkages and networks between American and European policy makers. Although policy tools and culture vary; the environmental problems faced by developed countries are often similar. There is much to learn from attempts to address these challenges on both sides of the Atlantic. The focus of this program is on the transportation sector as the fastest growing source of greenhouse gas emissions in industrialised countries, as a major source of pollutants, and as an integral part of the economic vitality and quality of life in urban areas. Fellowship topics include:

Innovative policies and practices to develop environmentally and economically sustainable transportation and land use planning;

- Market based tools including pricing, emission trading, and green taxes;
- Effective integration of transportation modes: public transit, walking, cycling, and new approaches to car use;
- Land use and growth boundaries to reduce car-dominated sprawl;
- Measures to reduce vehicle travel for 'non-commute' trips, both recreational and commercial;
- Innovative vehicle technologies and fuels;
- Community-based and educational efforts to promote more livable communities and lifestyle changes; and
- Environmental and health impacts of expanding air traffic and how it fits into multi-modal modes.

European environmental professionals are herewith invited to apply for the 2001 fellowship, which includes four individual fellowships for four weeks, and a two-week group fellowship for four fellows. On behalf of the GMF the Wuppertal Institute for Climate, Environment and Energy manages the application process for the European experts; the Center for Clean Air Policy in Washington manages the European fellowships in the U.S.

Address for your enquiries

Mrs. Susanne Böhler

GMF co-ordinator, Wuppertal Institute, Döppersberg 19, 42103 Wuppertal, Germany

Tel: (+49 202) 24.92.259 Fax (+49 202) 24.92.263

E-mail: s.boehler@wupperinst.org

I will be pleased to provide the program announcement including application guide by post or by e-mail to facilitate your task. Please phone or e-mail and ask for an announcement. The announcement is also available online at <http://www.wupperinst.org>

Notes for Contributors

Contributions to *World Transport Policy & Practice* are welcome. Whether you are a novice author or an experienced one, the Editor would like to invite you to consider sharing your thoughts and experiences with others like yourself. We can promise a considered and constructive review of your article and, for contributions deemed suitable, publication in *World Transport Policy & Practice*.

Read through the following guidelines and feel free to contact John Whitelegg, the Editor, who will be pleased to offer comments on drafts, work in progress, or ideas which could be made into an article.

Editorial objectives

The journal aims to provide validated information about the latest developments in transport policy to enable local authorities, governments, consultancies, NGOs and supra-national organisations to speed up their policy development and implement new ideas from around the world. It will:

- cover all passenger and freight transport
- deal with global as well as local issues
- include the development of the ideas of sustainability, the design of cities and rural areas, transport corridors and international links to improve health, the economy and the environment.

Article composition

Articles should normally be between 2,000 and 4,000 words. Shorter articles can be published as "Comment" pieces.

Responses to papers which have appeared in the journal, either as letters to the Editor or as response articles, will be welcomed.

Submitting articles

1. By e-mail

Articles for publication may be submitted by e-mail attachment to Pascal Desmond. It is useful if authors indicate what software is required to read any attachments and if they include the letter combination 'zq' in the title. Please DO NOT name articles 'whitelegg', 'wtp' or variations of these. Authors are advised that they may need to provide a version on paper and/or on 3.5" disk prepared on an Apple Macintosh or PC system.

2. On paper

Three copies of articles, typescript and double spaced with wide margins are needed. Manuscripts will not normally be returned, so you should ensure you retain a copy. Provide the article on paper of no less than 80 gsm weight with high quality print. This will enable electronic scanning if needed. Please supply the same version of the article on a 3.5" disk prepared on a Macintosh or PC system in ASCII format. Mark the disk clearly with your name, the article title and the software you have used. Where there is ambiguity, the disk version will normally be considered definitive.

Presentation

Headings and subheadings should be used at approximately 500–750 word intervals. Ensure that headings and subheadings are clearly identified.

Charts, diagrams and figures

These should be called "Figures" and numbered consecutively (e.g. Figure 1, Figure 2, etc.). Make sure they are clear and can be reproduced easily. In addition, provide the raw data so that we can redraw them, if necessary.

Indicate where in the text they should appear "(Figure 1 about here)". Each figure should have a brief title (e.g. "Figure 1. Schematic of the Programme").

Tables

Tables should be numbered consecutively, independently of figures. Indicate in the text where they should appear. Give them a brief title. Ensure that they are clear and legible.

Authors should not use many tabs or spaces between columns of data – normally, one tab is sufficient.

Maps

Maps are especially welcome as 'tiff', 'pict' or 'jpeg'. They should be numbered consecutively, independently of figures and tables and their location in the text should be indicated.

Ensure that they are clear, uncluttered and legible. They should have a title.

Measurements

SI units should be used throughout.

Abstracts & Keywords

Write an abstract of 75 words or so which summarises the main points of the article. It should be sufficient for a reader to decide whether or not they want to read the whole article.

Also note up to six keywords which describe the content of the article. These could include geographical area, if specific, industry, functions, managerial activity and process.

References

Authors should keep references to a minimum, ideally no more than ten to fifteen. References should be confined to essential items only and those that are necessary to establish key steps in an argument or key areas of support for a particular proposition.

Reference citations within the text should be by the author's last name, followed by a comma and year of publication enclosed in parentheses. A reference list should follow the article, with references listed in alphabetical order in the following form:

Books: Surname, Initials (Year of Publication) *Title* Place of Publication, Publisher.

Articles: Surname, Initials (Year of Publication) "Title" *Journal* Volume, Number, Pages.

Originality

The author should indicate if a paper has been presented elsewhere. If the author does not do so, the Editor will assume that the paper is an original contribution. Papers appearing in *World Transport Policy & Practice* should not be published elsewhere without the written consent of the Publisher of the journal.

Copyright

Authors submitting articles for publication must warrant that the work is not an infringement of any existing copyright. Papers and contributions published become the legal copyright of the publisher, unless otherwise agreed.

Contact details

World Transport Policy & Practice, Eco-Logica Ltd., 53 Derwent Road, LANCASTER, LA1 3ES. U.K.

Telephone: +44 1524 63175

Fax: +44 1524 848340

Editor: Professor John Whitelegg <ecologic@gn.apc.org>

Business Manager: Pascal Desmond <pascal@gn.apc.org>
<http://www.ecoplan.org/wtp/>