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**Short Version**

## **Mobility Styles in Leisure Time**

Final Report for the Project

“Reduction of Environmental Damage Caused by Leisure and  
Tourism Traffic”

Commissioned by the Federal Environmental Agency

FKZ 298 54 109

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## **Mobility Styles in Leisure Time – A summary of the results of the project ‘Reduction of Environmental Damage Caused by Leisure and Tourism Traffic’ commissioned by the Federal Environmental Agency**

### **Objectives**

The research project primarily aims to close the gaps in research concerning the empirical description of leisure traffic (journey purposes, mobility characteristics); secondly, it seeks to provide new insights into the social and motivational causes of leisure mobility. Thirdly and finally, it aims to estimate the damaging effects upon the environment that have been calculated here for the first time in a way that is lifestyle-specific. The intention is that the target group-specific results should yield conclusions that lead to a reduction in environmental damage caused by leisure traffic (including short breaks).

### **Project framework and research design**

This is an interdisciplinary research project by the Institute for Social-Ecological Research (ISOE), based in Frankfurt am Main, and the Eco-Institute in Freiburg/Berlin. For the first time, this collaboration involved the interrelation of research concepts drawn from the social sciences, transport research, and material flow analysis. It was thus possible to investigate not only the transport behaviour of lifestyle groups but also some of the environmentally harmful effects in a group-specific manner.

The research concept of mobility styles<sup>1</sup> was extended to include the leisure dimension, that is to say it was applied for the first time to leisure traffic. The assumption in the analysis of mobility styles is that transport behaviour (especially within leisure time) can be better understood if lifestyle-specific orientations and background attitudes and motivations that are of relevance to mobility are recorded and subjected to analysis.

In the social-empirical part of the project, the first task was to carry out a qualitative research phase that led to hypotheses and initial results regarding people’s subjective relationship with leisure and the significance of leisure mobility.

In a second, standardised empirical phase, 1000 Germans were questioned about their attitudes and orientations as well as their transport behaviour. In accordance with the methods of lifestyle research, questions were asked here about orientations, leisure preferences, and mobility orientations. In addition, the surveying of transport use during people’s most recent vacation and short break served to provide information about leisure and transport behaviour in everyday life. In order to find out about everyday transport behaviour, the details of journeys on three random days were also gathered. Transport behaviour on a workday was ascertained immediately after the face-to-face interview; transport behaviour at weekends, namely on a Saturday and a Sunday, was ascertained by means of subsequent telephone interviews (due to the methodology, vacations were subsumed here).

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<sup>1</sup> cf. Götz et al. 1997

## Results and findings

### *1. The definition and delineation of leisure*

Although the project is obviously oriented towards protagonists and target groups, the first task was to choose a system-theoretical definition of leisure that takes its cue from Bardmann<sup>2</sup>. The system-theoretical view is instructive because it undertakes a revealing change in perspective. According to this perspective, actions are observed not from the viewpoint of the protagonists, but from the functional perspective of the systems. If one temporarily chooses this perspective, leisure becomes a necessary ‘time out’<sup>3</sup> provided by social sub-systems (in this case work and the family) in order to save the individual from being constantly busy. Leisure is thus provided as a “means of offsetting the time-related demands imposed by a specific system” (Bardmann 1986, p. 154). This is a meaningful definition because it avoids all the normative implications of the older, pedagogical discussion of free time (whereby free time is connoted with leisure time) as well those of the misunderstanding of ‘leisure as freedom’. The concept of ‘time out’ makes it clear that the only thing to emerge initially is an openness in terms of how one uses one’s time. Expressed in system-theoretical terms, contingency has to be mastered. From the individual’s viewpoint, it is possible to act in a number of ways. This sort of notion of leisure makes it far easier to understand that leisure is a field that is just as rich in conflict, socially negotiated, and in constant need of fresh delineation as any other form of time use.<sup>4</sup>

However, the notion of leisure that takes its cue from the ‘time out’ concept also contains an important core: housework and carework constitute one of the social systems that provide (or don’t provide) ‘time out’ periods. Seen from this perspective, it becomes evident that it is not the content of the activity that determines what is leisure and what is work. It is far more the case that the same activity can possess different qualities for people with different role responsibilities: on one occasion it is a responsible duty, and on another it is an activity that is perceived as being part of one’s leisure time.

### *2. Leisure as a way of achieving clear boundaries*

Whereas this perspective from the viewpoint of functional systems (work and family) suggests that ‘time out’ is provided because the systems can only function if the protagonists are granted ‘time out’ periods, the fresh change in perspective from the viewpoint of the protagonists demonstrates that leisure is a means of organising things and setting clear boundaries. Having or not having leisure time, taking or not taking time for oneself has to be organised, has to be created. Several underlying strategies for deline-

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<sup>2</sup> Bardmann 1986

<sup>3</sup> The concept of ‘time out’ that Bardmann refers to stems from everyday ethnographic analyses in the USA that were analysed by Cavan (1966) as ‘time out periods’ (quoted in Bardmann 1986, p.158).

<sup>4</sup> cf. Gloor 1993

ating different time spheres become apparent in the empirical material of the qualitative interviews, and at this point it is only possible to report upon them in passing.<sup>5</sup>

The empirical material contains:

- Variations from the perspective of traditional ‘masculine’<sup>6</sup> (heteronomous) employment: *“For me, leisure begins once I’ve left the company”*
- Forms of self-organised activity in one’s leisure time: *“Leisure? That’s when nobody disturbs me while I’m working...”* (Mathematician who has turned his passion for programming into a second leisure-time job, one that he shares with his partner).
- Forms of ‘feminine’ stage-by-stage delineation: *“I’m no longer under any pressure once I’ve left the supermarket (which in this case is the workplace). I’ve then got my time off at home... I can then allocate myself the work that still needs to be done at home”*. Thus only when one has completed one’s work at this second level of obligation can ‘time off from employment’ and ‘time off from housework’ become ‘leisure time for myself’, namely one’s own time: *“Just doing nothing for once, locking up the flat, getting on my bike...or going for a wander...and then sitting down in a café...so that I don’t have to do anything with the flat, so that I get someone to serve me for once”*.

This example (“getting on my bike”) reveals a cause of leisure mobility (or, rather, journeys outside the home in one’s leisure time) that is hardly ever mentioned in the debate. At the end, the same respondent (a supermarket sales assistant) discourses on the topic of leisure: *“Locking up your flat and simply going off, that’s more like leisure than being at home. You’re always doing something if you’re at home”*. This hypothesis was investigated further in the representative survey. 69% of women questioned agree with the statement that leisure time only begins once the housework has been done (the figure for men is 50%). 44% of all respondents agree with the statement: *“It’s virtually impossible to enjoy my leisure time at home because there’s always something to do.”* There are no significant gender-specific differences (after all, lots of men are DIY enthusiasts), but there is a 5% higher value for women when it comes to the statement *“This applies 100%”*).

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<sup>5</sup> cf. Götz et al. 2002, p. 36ff.

<sup>6</sup> ‘Masculine’ and ‘feminine’ seen as the social construction of social femininity and masculinity with the correspondingly unequal distribution of unpaid housework and carework.

## **The definition of mobility**

### *Three-dimensional concept of mobility*

With regard to defining mobility in a way that is appropriate to the problem, one has to refer to a concept of mobility that was developed as part of the CITY:*mobil*<sup>7</sup> joint project. According to this, mobility simultaneously describes three dimensions:

- Mobility is the physical movement of people and things in space
- Mobility simultaneously indicates the accessibility (in terms of social space) of options and opportunities that can satisfy one's needs
- Finally, mobility also always describes positioning in symbolic space. Transport is always a symbol of the protagonists' social positioning. And vice versa: positions in the social space of lifestyles also always have an influence upon mobility orientations and practice.

### *Operationalisation of the different dimensions of mobility*

The consideration of all three dimensions of mobility in the empirical research means it was necessary to operationalise transport behaviour in spatial terms as well as the various opportunities to satisfy one's needs (in the form of journey purposes) together with dimensions of social positioning (in the form of lifestyle orientations).

As far as the opportunities are concerned, it was initially a matter of learning the lessons from the shortcomings in previous research into transport behaviour and developing an appropriate list of journey purposes. It was possible to have recourse here to several qualitative and quantitative projects as well as pieces of work carried out by other researchers.<sup>8</sup> Finally, taking one's cue from Lanzendorf (although with some deviations), a list was developed containing 33 journey purposes, of which 18 are leisure journey purposes (see following chart):

### *Lifestyle segments*

It must be stated in advance that the results presented constitute a typology based on the limited means offered by a national 1000-strong sample. This imposes narrow limitations upon cluster differentiation. Numerous cluster analyses were carried out. The software used was clearly stretched to its limits here (the project's final report goes into typical problems involved in the various clustering procedures).

It was finally possible to identify five plausible groups as an ultimately stable outcome of the various calculations, and, as is normal practice with typologies, they were given short names to characterise them.

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<sup>7</sup> cf. CITY:*mobil* (1999), p. 28

<sup>8</sup> cf. Lanzendorf 2000 as well as Götz et al. 1997: p. 340 f.

## 1. DISADVANTAGEDS (DIS)

### *Constituent orientations*

Members of this group have an instrumental attitude to work, but otherwise only stand out due to the fact that in their case, lifestyle-specific orientations are scarcely developed, apart for agreement with the item: “I enjoy drinking one over the eight with my friends”.

### *Social situation*

Representation of men is slightly above average (58%); representatives of the group have low school qualifications, low net household income, and the rate of unemployment is above average. The group contains the greatest proportion of blue-collar workers (34%) (+10%) as well as the greatest proportion of unemployed people and recipients of social security.

## 2. MODERN-EXCLUSIVES (MOD-EX)

### *Constituent orientations*

Representatives of this group are characterised by their strong professional orientation and considerable job satisfaction. They appreciate a certain exclusiveness in terms of their consumption and have an affinity with anything that they consider to be ‘in’: at the time of the survey, this meant shares, the Internet, and exclusive brand clothing. But at the same time they also have a distinct yet measured family orientation.

They manifest a certain commitment to social justice and ecology, without this making them hostile to technology. On the contrary, this group derives great fun from working on computers and surfing the Internet.

A certain insistence upon the traditional gender-specific division of work is apparent within the group.

### *Social situation*

Representation of men is slightly above average (60%); members of this cluster have medium to higher school qualifications, above-average net household income, and the greatest proportion of full-time workers (at 63%, this is 15% above the average). Approx. 2/3 live as part of a couple or in a family set-up (12% above the average); 40% have children in the household (+10%).

## 3. FUN-ORIENTEDS (FUN)

### *Constituent orientations*

Representatives of this group have individualistic fun, experience, and risk orientations and a very strong and positive link with modern technology (computers, the Internet, and mobile phones).

They are characterised by a strong reference to (peer) groups and an aversion to commitments to relations and neighbours. They stand by their 'egocentricity' and have an instrumental work orientation; because there are many school and college students in the group, this probably often means casual jobs in the pre-vocational phase.

#### *Social situation*

Younger people are clearly over-represented; it contains the highest proportion of people in education, but also self-employed people (!). The group has the highest educational qualifications (26% with a college degree as opposed to 12% overall), and the highest proportion of single people (approx. two-thirds).

### **4. OVERBURDENED FAMILY-ORIENTEDS (OVER-FAM)**

#### *Constituent orientations*

Family values that provide a meaning to life have the greatest significance in this group. This goes with a domestic and extremely neighbourly orientation. The group manifests a slightly above-average willingness to spend money on eco-friendly goods. Members of this group suffer from the problems associated with insufficient demarcation of work, housework, and leisure time. They feel overburdened and overstretched.

#### *Social situation*

Almost two-thirds are women; the group contains the highest proportion of part-time workers, and has an average net household income. 70% live as part of a couple or in a family set-up (+14%). In the case of almost 50% of them there are children living in the household, and in the case of almost one third of them there are even 2 or more children (+12%).

### **5. TRADITIONAL-DOMESTICS (TRAD)**

#### *Constituent orientations*

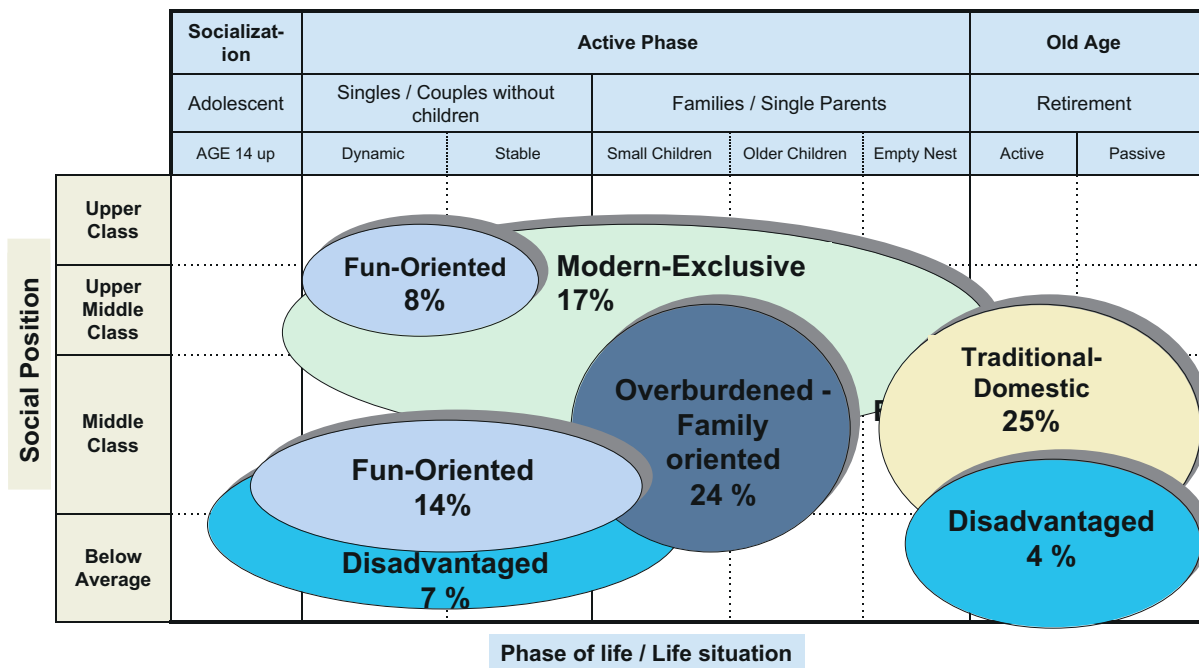
In this group, the need for security and the avoidance of any risk are pronounced to an above-average degree. In terms of consumption, there is a preference for durability and proximity to Nature. Traditional values and virtues are upheld. There are severe reservations concerning modern information and communication technology.

#### *Social Situation*

Almost balanced numerical ratio in terms of gender (56% are women). The oldest subgroup (= over 65 years old) is clearly over-represented (36%). Two-thirds of this type do not work, 58% are pensioners (total sample = 25%), and an above-average number are widowed (27%; overall = 15%). There is a predominance of low school qualifications (71% secondary school; total sample = 54%) and low net household incomes/pensions.



**ISOE Modell of Social-Positioning:  
Leisure Time Mobility Types**



**Type-specific leisure behaviour**

Leisure behaviour, operationalised as leisure activities engaged in over the last week<sup>9</sup>, manifests a plausible and distinctive picture with regard to many activities. On the one hand, significant differences are apparent when it comes to modern leisure activities such as use of the Internet and computers. FUN-ORIENTEDS manifest the highest value here, with 49% Internet use within the last week, whereas TRADITIONAL-DOMESTICS have the lowest value (3%).

When it comes to the leisure activity of ‘going to parties and celebrations’, the FUN-ORIENTEDS’ value (35.7% within the last week) is also extremely high, whereas DISADVANTAGEDS only manifest a value of 7.9%. For activities such as going to church or cemeteries, TRADITIONAL-DOMESTICS are at a very high level with a value of 44.7% for the last week, whereas FUN-ORIENTEDS have the lowest value at 5.4%. MODERN-EXCLUSIVES’ orientation towards social commitment is confirmed by the fact that they manifest the highest value (59.3%) when it comes to the leisure activity of ‘commitment to political parties, unions, etc.’, whereas TRADITIONAL-DOMESTICS manifest such a commitment at levels of only 3.7%.

<sup>9</sup> With regard to the wording of the questions and – with minor deviations – also with regard to the leisure activities about which data was collected, the methodology of the ‘Leisure Monitor’ was followed, by kind permission of British American Tobacco’s Leisure Research Institute; cf. BAT Leisure Research Institute, 1999.

**Results concerning transport behaviour**

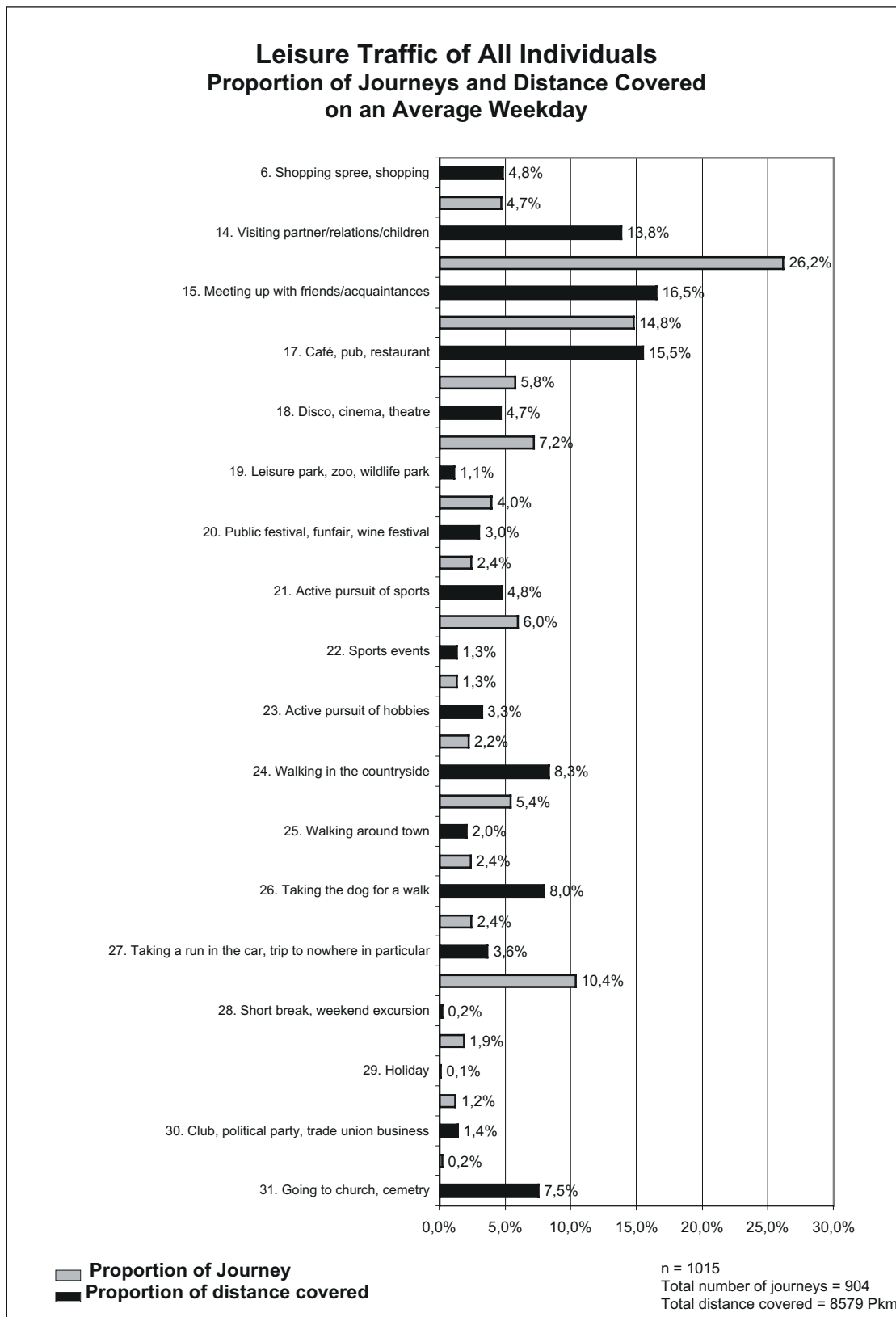
On average, 3.0 journeys per day were made by those people questioned who were out of the house on the day of the survey. The car and/or motorised two-wheeler dominate when it comes to the means of transport selected for all journey purposes: 51.8% of all journeys were made with motorised individual transport (MIT). Public transport (PT) was used for 6.7% of journeys, and bicycles were used for 10.9% of all journeys. 30.6% of all journeys were made on foot.

If one looks at leisure journeys alone, the proportion of MIT drops to 40.3% and the proportion of journeys made on foot rises to 43.1%. In terms of leisure traffic, only 5.1% of all journeys are made by PT.

Above-average journey distances are covered on the way to places where people work or study, whereas journeys to access services are shorter on average. With an average length of 9.5 km, leisure journeys tally with the average for all journeys covered on a normal weekday. During the course of a week, levels of leisure traffic (namely journeys including distances covered) add up to an average of 58.6 km per person. Three-quarters of this leisure traffic is covered with MIT, 10.8% on foot, 9.1% by PT, and 6.4% by bicycle.

**Proportion of all journey purposes that are leisure journeys**

The following chart shows the percentages of these journey purposes with reference to all the journeys about which data was collected in the survey (initially still without distances being taken into account)



The proportion of all journeys that relate to leisure thus amounts to 34.8%. Despite differences in the various samples, this finding does not deviate crucially from the values of the three most recent KONTIVs, where the proportion of journey purposes relating to leisure is 32.4% (1976), 31.9% (1982), and 32.9% (1989). Apart from this, however unspectacular it might at first sound, the stability of the proportion of leisure journeys is an important finding. This is because it refutes the hypothesis (also put forward in this project) that a more sophisticated journey purposes model would lead to a significant shift in the proportion of leisure journeys as a result of the more precise categorisation of activities. This is not the case. It becomes clear that the question of delineation via the use of definitions has virtually no role to play.

A second important finding arises out of a summarised interpretation of emphases in terms of journey purposes: the greatest levels of traffic in leisure time come about as a result of social binding activities: 'visiting relations/children/life partner / family celebrations' together with 'meeting friends and acquaintances'. If one additionally considers that 'disco, cinema, theatre, concerts, musicals, opera, exhibitions' and 'attractions such as leisure parks, zoos, wildlife parks' and 'public festivals, fêtes, wine festivals, funfairs' are activities that are usually enjoyed with the family, in a group, or at least not alone, then one can summarise as follows: leisure traffic chiefly serves to nurture social contacts and/or relationships with friends and family. The finding that is presented (great relevance of journey purposes that nurture social contacts) accords with other recently completed surveys (cf. Zängler 2000, p. 85).

'Drives in the car, trips out', the leisure journey purpose with the third largest levels of leisure traffic, mainly happen on Sundays. This category most closely corresponds to the (frequently dramatised) picture of unpredictable 'experience mobility', namely 'traffic for its own sake' (Heinze 1997, p.19).

### **Proportion of traffic levels that relate to leisure journeys**

The not very dramatic picture of leisure traffic (below), as shown by the evaluation of journey purposes, is confirmed once the distances of the various journey purposes are taken into account, namely once traffic levels are used as a basis (see Diagram 2).

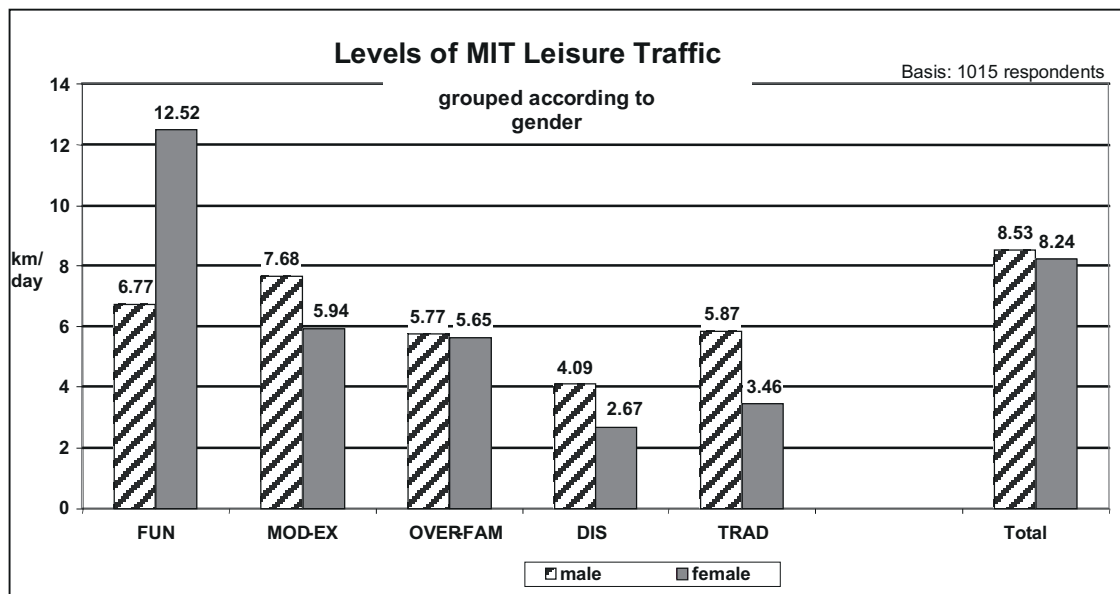
The value of 33.7% for traffic levels relating to leisure on a normal working day and at weekends (thus not including vacation trips or air travel) likewise doesn't show a dramatic picture in terms of its magnitude; 'Traffic in Figures' features a value of 41.8% for 1997, which includes 7.8% vacation trips. Thus with regard to everyday leisure traffic it arrives at the same value as the study presented here: 34% (cf. BMVBW 1999, pp.211 & 217).

### **Transport behaviour in the lifestyle segments**

FUN-ORIENTEDS: of all the groups, this is the one that is most often on the move. Fun-Orienteds have a journey rate that is 10% higher than the average, and this is true of every day of the week. With regard to both the modal split in terms of journeys as

well as the distances covered in a given period, PT is used most by this group. Moreover, this also applies to leisure journeys. Here, people turn especially frequently to the bicycle as a means of transport. By contrast, there is a marked aversion among Fun-Orienteds to going on foot. In total, Fun-Orienteds cover the greatest distances in leisure traffic over the course of a week. The most frequent leisure journey purposes are ‘meeting friends/acquaintances’, ‘visiting cafés, bars, and restaurants’, and ‘actively participating in sport’.

The women in the Fun-Orienteds group display a special feature when compared to all the other lifestyle groups. Whereas in all the other groups it is the men who have higher levels of leisure traffic than the women in the respective group, the situation is reversed when it comes to the Fun-Orienteds. Here, women on average cover considerably greater distances per day in their leisure time. The difference becomes even more obvious when it comes to MIT levels of leisure traffic: whereas men cover an average of 6.7 km per day in the car in their leisure time, women drive 12.5 km per day in the car.<sup>10</sup>



MODERN-EXCLUSIVES: together with Overburdened Family-Orienteds, members of this group manifest the greatest car use. All other means of transport are only used at below-average levels. Nonetheless, people resort more frequently to bicycles, buses, and trains and/or make more journeys on foot when it comes to leisure traffic than when it comes to journeys to work or for domestic purposes. With a share of more than 42%, journeys to work or places of education constitute the greatest proportion of all journey purposes in this group. At 11.8 km, the average journey length is the longest in a comparison of all the lifestyle groups. Above-average distances are also covered in terms of leisure traffic during the course of a week.

<sup>10</sup> A result that is not significant because the size of the sub-groups was insufficient, but is nonetheless heuristically interesting. Interpretation: gender-specific unequal distribution of housework and care-work (and thus the unequal distribution of leisure in favour of men) only begins in the family phase.

**OVERBURDENED FAMILY-ORIENTEDS:** when it comes to this group, the proportion of journeys made by car is almost 10 percentage points above the average. Even if the distribution in terms of choice of means of transport is very similar to that of the Modern-Exclusives, the average distance (10.0 km per journey) is one-sixth shorter. It can be seen from this that the orientation towards somewhat local destinations is not merely expressed, but can also be encountered in everyday transport behaviour. Overburdened Family Orienteds have the lowest proportion of leisure journeys of all the groups, whereas journeys to work and to access services have an above-average significance during the course of a week. What is striking when it comes to leisure journeys is that this type is very often on the move as part of a group and/or with several people. The average value of 2 people involved in every journey is the highest when compared to the other groups.

**DISADVANTAGEDS:** in terms of the important parameters, Disadvantagedes manifest the lowest values of all the groups. Their number of journeys on all days is 12% lower than the average. One-fifth of this group didn't leave the house at all on the day of the survey. When it comes to choosing a means of transport, members of this group resort far less to the car. This applies to all journey purposes as well as leisure journeys. The leisure journeys made every week by this group on average add up to 37.4 km journey length. This represents the smallest weekly leisure traffic levels of any group, and is more than 20 km lower than the average. In terms of journey purposes, 'meeting with friends and acquaintances' is followed in second place by 'visiting a café or bar' – taking the dog out for a walk.

**TRADITIONAL-DOMESTICS:** this group's choice of transport manifests extraordinary values in every respect. A very low PT share (only 3.8% of all journeys as opposed to 6.7% on average) and the lowest MIT share (37.6% as opposed to 51.8% for everyone together) contrast with a very high proportion of non-motorised journeys. In leisure traffic it is even the case that more than 70% of journeys are made on foot or by bicycle. If one compares the proportions of journey purposes in this group, one is struck by the unusually high proportion of journeys made to access services (44.3%). The radius within which these Traditional-Domestics operate is predominantly local; at 6.3 km it corresponds to the lowest average journey length of all the lifestyle groups, one that constitutes only 64% of the average journey length of all people. The preferred destinations in leisure traffic are also unusual: the most frequent journey purpose here is visiting church or cemeteries, only then followed by visits to children/relations or meeting up with friends and acquaintances.<sup>11</sup>

The survey was unable to confirm the thesis that self-determination in one's ability to choose and structure one's local living environment leads to smaller distances being covered in terms of leisure traffic. Both satisfaction with one's home as well as the use of a garden in one's immediate living environment turn out not to be factors that cut down on traffic.

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<sup>11</sup> This matches Lanzendorf's findings (2000, p. 126).

### **Weighing up of the environmental effects of leisure traffic**

The environmental analysis of leisure traffic focuses upon the determination of energy consumption and emissions of air pollutants and CO<sub>2</sub> equivalents. The TREMOD traffic emissions model that was developed on behalf of the Federal Environmental Agency provides a database for energy consumption and emission factors, one that also takes into account indirect emissions linked to use of means of transport. When it comes to motorised individual transport, data concerning occupancy levels is available from the survey; for public transport, use is made of nationwide average values.

Traffic levels (and the distances driven that are derived from them) are taken from the quantitative survey and used as a basis when weighing up the environmental effects in the status-quo analysis. The effects upon the environment are individually investigated for all the journey purposes that were asked about, thus enabling one to deduce from this the relevance of leisure traffic upon the environment (the impact on the environment in terms of noise and ground use could not be estimated on the basis of this empirical research).

The proportion of total primary energy consumption and/or total emissions that can be put down to everyday leisure traffic is of the magnitude of 22% to 23% (without air traffic), independent of the field of environmental activity that was observed.

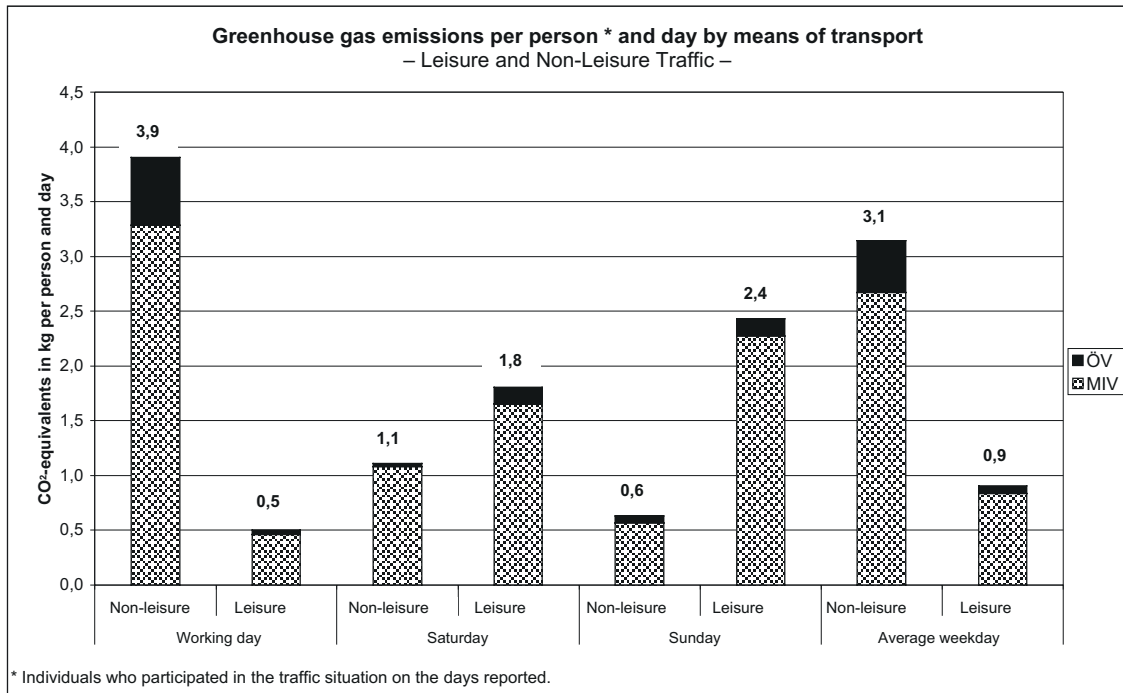
If the individual days of the week are analysed separately and a distinction is made between leisure and non-leisure traffic, this yields the following picture: on a typical working day (Monday to Friday), emissions of CO<sub>2</sub> equivalents due to non-leisure traffic (at around 3.9 kg per person per day) are eight times higher than those due to leisure traffic (0.5 kg per person per day). By contrast, at the weekend it is leisure traffic that dominates: on Saturdays, the ratio is 1.1 kg per person per day when it comes to non-leisure traffic compared to 1.8 kg per person per day for leisure traffic; on Sundays the ratio is 0.6 to 2.4 kg per person per day. Yet even on Sundays, leisure traffic reaches only around 60% of specific non-leisure traffic emissions on a working day (it has to be stressed once again that no account is taken of air traffic here).

On an average weekday, travel by public transport contributes around 8% to CO<sub>2</sub> emissions of leisure traffic (and 15% to non-leisure traffic emissions). When it comes to acid-formers, the proportion of total emissions in leisure traffic due to public transport amounts to 14%.

At around 5.4 kg per person per day, Fun-Orienteds' emissions of CO<sub>2</sub> equivalents are the highest of all the lifestyle types. They lie at around 33% above the average value for all people. The Modern-Exclusives' group causes the second highest specific emissions (with around 4.8 kg). At around 2.0 kg per person per day, Traditional-Domestics' emissions of CO<sub>2</sub> equivalents are only around 50% of the average value. Depending on the lifestyle group, leisure traffic emissions of CO<sub>2</sub> equivalents range between 0.7 kg per person per day (Disadvantagedes and Traditional-Domestics) and 1.3 kg (Fun-Orienteds).

Emissions of CO<sub>2</sub> equivalents essentially reflect how traffic levels of motorised transport are distributed among the various lifestyle types. The structure demonstrated by the

example of greenhouse gas (CO<sub>2</sub>) applies likewise to primary energy consumption and emissions of ozone precursor substances.



### Measures and consequences

The research was concluded with the development of target group-specific measures that are presented in brief form in the following overview. A collection of measures was described for each group; they are tailored to the target group-specific orientations and simultaneously contribute to the reduction of traffic pollution and environmental impacts in leisure traffic.



**Brief Overview of Measures**

	FUN	MOD-EX	OVER-FAM	DIS	TRAD
Across all means of transport	<ul style="list-style-type: none"> <li>• Computer games that have a realistic connection with mobility (manufacturers, Local Authorities)</li> </ul>		<ul style="list-style-type: none"> <li>• Help with improved budget management (Local Authorities, social facilities)</li> <li>• Appealing to people via children (facility providers, <i>Länder</i>)</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring guaranteed mobility (Federal Government, <i>Länder</i>, administrative districts, Local Authorities)</li> </ul>	<ul style="list-style-type: none"> <li>• Sensitising the public to the transport needs of older people (<i>Länder</i>, Local Authorities)</li> <li>• Quality and complaint management - complaints box (Local Authorities, mobility providers)</li> </ul>
Motorised individual transport	<ul style="list-style-type: none"> <li>• Modernisation of car-sharing organisations (car-sharing providers)</li> <li>• ‘Rent-my-car’ concepts (providers)</li> <li>• ‘Blind date’ style of putting people in touch with potential passengers (mobility agencies)</li> <li>• Use of E-bike three-wheel taxis (Local Authorities)</li> <li>• Organisation of taxi-shares with strangers (Federal Government, <i>Länder</i>, taxi firms)</li> <li>• Bike transport in car-sharing vehicles (car-sharing providers)</li> </ul>	<ul style="list-style-type: none"> <li>• Marketing concept for travel by taxi as an integrated transport option (Federal Government, Local Authorities, taxi organisations)</li> <li>• Goods delivery service (commercial organisations, mobility agencies)</li> <li>• Exclusive car-sharing options (car-sharing providers)</li> <li>• Coupling of monthly public transport ticket and car-sharing as a trial offer (also for people who have just moved to the area) (transport companies, PT consortia, car-sharing providers)</li> <li>• Schemes to fetch and carry children (social facilities, Local Authorities, mobility agencies)</li> <li>• Promotion of the development of eco-efficient low-emission motor-bikes with a ‘trend-setter image’ (Federal Government, <i>Länder</i>)</li> </ul>	<ul style="list-style-type: none"> <li>• Promotion of housing-related car-sharing (housing companies, car-sharing providers, Local Authorities)</li> <li>• Initiative for private car-sharing (Local Authorities, mobility agencies)</li> <li>• Services organised to take children to activities (neighbourhood organisations, Local Authorities, mobility agencies)</li> </ul>	<ul style="list-style-type: none"> <li>• Individualised marketing for car-sharing (Local Authorities, car-sharing providers)</li> <li>• Simplify access to car-sharing (car-sharing providers)</li> <li>• Setting up of communal taxis (Federal Government, <i>Länder</i>, Local Authorities)</li> <li>• Offer service to link up drivers with passengers on event posters (event promoters, mobility agencies)</li> <li>• Marked multi-person-taxi pick-up points for various key directions (Local Authorities, Federal Government)</li> </ul>	<ul style="list-style-type: none"> <li>• Car-sharing for organisations and clubs &amp; associations (car-sharing providers, organisations)</li> <li>• Mobility management and advice for clubs &amp; associations (in rural areas) (Local Authorities, mobility agencies)</li> <li>• Promotion and institutionalisation of neighbourhood car-sharing (mobility agencies, Local Authorities)</li> <li>• Organising services to ferry people from A to B (social facilities, Local Authorities, mobility agencies)</li> </ul>

	FUN	MOD-EX	OVER-FAM	DIS	TRAD
Public transport	<ul style="list-style-type: none"> <li>• Internet access in trains and trams (transport companies)</li> <li>• Extension of electronic ticketing (transport companies)</li> <li>• Option of taking someone with you if you have a term-time ticket (transport companies, PT commissioners, PT consortia)</li> <li>• Introductory fares for young adults (PT consortia)</li> <li>• Extension of combined ticket offers (PT consortia, event organisers)</li> <li>• Extension of evening local PT options (transport companies, PT commissioners)</li> <li>• Flexible taking over of night-time PT service by taxis (Local Authorities, PT commissioners, PT consortia)</li> <li>• Image advertising via products (transport companies)</li> <li>• Online and Internet offers with information about how to get there (transport companies, mobility agencies)</li> </ul>	<ul style="list-style-type: none"> <li>• Introduction of an exclusive class in PT (transport companies, PT commissioners, PT consortia)</li> <li>• Customer care in transport companies (transport companies, PT consortia)</li> <li>• Transferability of privileges to family (PT consortia)</li> <li>• Themed all-in travel offers (tour operators)</li> <li>• Sale, reservation, and payment of tickets via mobile phone (transport companies)</li> <li>• Appealing, modern vehicle design (manufacturers, PT commissioners, transport companies)</li> <li>• Comprehensive electronic information for passengers in vehicles (transport companies)</li> <li>• Online information for when people are on the move (transport companies, mobility agencies)</li> </ul>	<ul style="list-style-type: none"> <li>• Leisure traffic plans (transport companies, PT consortia, mobility agencies)</li> <li>• Short break offers to provide relief from family responsibilities (tour operators)</li> <li>• Play compartments in all trains (transport companies)</li> <li>• Trial offers (transport companies, PT commissioners, PT consortia)</li> <li>• Improvement of fare conditions for families in PT (transport companies, PT consortia)</li> <li>• Reduced entrance fee in leisure facilities if one travels to them in an eco-friendly way (facility providers)</li> </ul>	<ul style="list-style-type: none"> <li>• Extend the option of taking someone with you to local PT period tickets (PT consortia)</li> <li>• Period ticket incentives (transport companies, PT consortia)</li> <li>• Loyalty bonuses for regular customers (transport companies, PT consortia)</li> <li>• Free gifts when buying annual season tickets (transport companies, PT consortia)</li> <li>• TV in long-distance and local trains (transport companies)</li> <li>• Flexible options for travel home at weekends (PT commissioners, transport companies)</li> <li>• Clear electronic information for passengers (transport companies)</li> <li>• Revamp stations to create interesting activity areas (owners, Local Authority)</li> <li>• Fan items for transport companies (transport companies)</li> </ul>	<ul style="list-style-type: none"> <li>• Service staff in the vehicles and at stations (transport companies, PT commissioners, PT consortia)</li> <li>• Clear, more than adequate information systems (transport companies)</li> <li>• Extension of flexible local PT systems in rural areas (PT commissioners, transport companies)</li> <li>• Increase cleanliness in PT (transport companies)</li> <li>• Supplementing local PT systems with modern citywide and district-wide buses (PT commissioners, transport companies)</li> <li>• Bus services to events for senior citizens (transport companies, events promoters)</li> <li>• Central point for print media in buses and trams (transport companies)</li> </ul>

	FUN	MOD-EX	OVER-FAM	DIS	TRAD
Public transport (continued)	<ul style="list-style-type: none"> <li>• Info options via headphones (transport companies, mobility agencies)</li> <li>• ‘Party routes’ provided by transport companies (transport companies)</li> <li>• Events in underground stations and depots (events promoters, transport companies)</li> <li>• Group offers for events (transport companies, PT consortia)</li> <li>• Travel by train to skating tours (transport companies)</li> <li>• Versatile arrangement of bus and train interiors (transport companies, manufacturers)</li> <li>• Large-format, topic-related, changing design of vehicles (transport companies)</li> <li>• Marketing of transport companies’ techn. accessories (transport companies)</li> <li>• Daily newspaper swapshop in PT (transport companies)</li> </ul>	<ul style="list-style-type: none"> <li>• Electronic information about sights and events along the route (transport companies, mobility agencies)</li> <li>• Marketing of transport companies’ techn. accessories (transport companies)</li> <li>• Changing, topic-related interior design (transport companies)</li> <li>• Wellness offers in trains (transport companies, providers)</li> </ul>		<ul style="list-style-type: none"> <li>• Events at bars with combined transport via local PT (transport companies, PT consortia, town centre organisations)</li> <li>• Free information about fares that can be accessed via mobile phones (transport companies, PT consortia)</li> </ul>	

	FUN	MOD-EX	OVER-FAM	DIS	TRAD
Bicycle, electric bicycle	<ul style="list-style-type: none"> <li>• Extension of rapid bike routes (Local Authorities, <i>Länder</i>)</li> <li>• Learning from illegality (Local Authorities, Federal Government, <i>Länder</i>)</li> <li>• Extension of bike adventure trails (Local Authorities)</li> <li>• Reduced entrance fees for cyclists (events promoters)</li> <li>• Secure places to leave one's bike at leisure destinations (events promoters, Local Authorities)</li> <li>• Promotion of hybrid vehicles (Federal Government, manufacturers, <i>Länder</i>, Local Authorities, tourism associations)</li> <li>• Free/inexpensive rental bikes financed via advertising (Local Authorities, independent providers)</li> </ul>	<ul style="list-style-type: none"> <li>• All-in service for bikes at railway stations (transport companies, Local Authorities)</li> <li>• Individual (lockable) cycle shelters with a modern design (manufacturers, Local Authorities, transport companies)</li> <li>• Cycle events at and to exclusive destinations (events promoters, Local Authorities)</li> </ul>	<ul style="list-style-type: none"> <li>• Extension of cycle path networks into daytime and nighttime networks (Local Authorities, <i>Länder</i>)</li> <li>• Swapshop for cycle accessories that are suitable for families (mobility agencies)</li> <li>• Marketing concept for electric bikes (Federal Government, Local Authorities)</li> <li>• Sharing of E-bikes in residential areas (housing organisations, Local Authorities)</li> <li>• Guided city tours by bike (independent providers)</li> <li>• Experiencing Nature on guided bike tours for the family (independent providers)</li> </ul>	<ul style="list-style-type: none"> <li>• Leasing of e-bikes (Local Authorities)</li> <li>• Rental bikes in line with the shopping trolley principle (Copenhagen model) (Local Authorities, independent providers)</li> </ul>	<ul style="list-style-type: none"> <li>• Special rates when buying electric two-wheelers (<i>Länder</i>, Local Authority)</li> <li>• Electric bike-sharing at selected stations (independent providers, transport companies)</li> <li>• Electric bike-sharing in an institutional framework, for example via clubs &amp; associations as providers (institutions, independent providers)</li> <li>• Shopping tricycles and two-seaters (manufacturers, Federal Government)</li> </ul>

	FUN	MOD-EX	OVER-FAM	DIS	TRAD
Travel on foot	<ul style="list-style-type: none"> <li>• Promote inline-skating (Local Authorities, Federal Government)</li> <li>• Facilitation of skate, push-scooter, and motor scooter rallies (Local Authorities)</li> <li>• Scooter rental in town centres in line with the shopping trolley principle (independent providers, Local Authority)</li> </ul>	<ul style="list-style-type: none"> <li>• Lockers at key shopping locations for the safe storage of shopping purchases (Local Authority, town centre traders)</li> </ul>	<ul style="list-style-type: none"> <li>• Always green at pedestrian crossings (Federal Government, Local Authorities)</li> <li>• Defusing of the dog excrement problem via 'push and pull' measures (Local Authorities)</li> </ul>	<ul style="list-style-type: none"> <li>• Promoting awareness of going on foot (Federal Government, <i>Länder</i>, Local Authorities)</li> <li>• Pedestrian town plans with target group-specific attractions (Local Authorities, mobility agencies)</li> </ul>	<ul style="list-style-type: none"> <li>• Extension of original footpath networks (Local Authorities, <i>Länder</i>)</li> <li>• Wide, safe footpaths in rural areas too (Local Authorities, <i>Länder</i>)</li> <li>• Extend 'unofficial' pathways (so that footpath planning learns from experience) (Local Authorities)</li> </ul>

### **Estimate of impact**

The opportunities to influence things as described in the chapter that deals with the measures, and that have their main impact in leisure traffic, were subjected to a rough estimate of the impact they would make (in the sense of a ‘what if’ observation). The precise presentation of assumptions and calculation guidelines is presented in the main report. In order to be able to assess the impact of the measures in isolation from other effects, future reductions in emissions due to technical progress or legal impositions during the period in which the measures are implemented were not taken into account.

Assuming that the target group-specific measures show a clear impact and one manages to reduce the use of cars and motorcycles on specific journey purposes by 10-20%, then taken as a whole the proportion of MIT in terms of total levels of leisure traffic drops from 74% to 62%. Taking an average of all people, the measures proposed for each of the individual lifestyle groups effect a reduction of around 6% in specific emissions of CO<sub>2</sub> equivalents. At around 5%, the decrease in greenhouse gases turns out to be smallest among Overburdened Family-Orienteds. The greatest reduction (8%) is achieved among Traditional-Domestics. Whereas the impact of the measures is similar when it comes to primary energy consumption and emissions of ozone precursor substances, the situation is different when it comes to acid-formers. Increases in emissions of between 2% and 12% (depending on the target group) can be recorded here, and they can be traced back to the higher proportions of PT.

All in all, it becomes evident how difficult it is to achieve a significant reduction in emissions with today’s levels of technical expertise.

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