Travel as a function of (life) projects

TRAVEL AS A FUNCTION OF (LIFE) PROJECTS

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1. EXPLORING THE MOTIVES TO TRAVEL: A PROPOSITION

Activity-travel behaviour is motivated by a variety of human needs, commitments and life styles (Stern and Richardson, 2005). Over the last few decades, several approaches were developed with a focus on people's deeper motivations to travel which exceed usual explanatory determinants such as the belonging to a certain socio-economic group, the spatial dispersion of activity opportunities, generalised costs or income budgets. The list of such approaches involves the identification of 'mobility styles' (Götz, Jahn and Schultz, 1997), mobility biographies' (Lanzendorf, 2003) or social network geographies (Larsen, Urry and Axhausen, 2006) and their travel implications.

We want to add to this list by suggesting an approach which considers the mobility consequences of 'personal projects' (Axhausen, 1998). Similar ideas – for example in the context of time-geography (Pred, 1981) – were developed earlier or were technically applied elsewhere (Miller, 2005a; b). An exploration of its far-reaching implications for travel motives and behaviour or an empirical test was however never done.

The key notion of our approach is that (most) individuals formulate projects to translate their goals of different importance and their understanding of themselves into reality (Nuttin, 1984). Those personal projects might be small or more comprehensive and their origins might be fundamental individual life goals such as the sense of belonging, appreciation and self-realization or derived goals with a less essential meaning to the individual. If we regard personal projects and their related activities as a behavioural realization of those goals, travel is a fundamental precondition of getting things done as well as an outcome of what people plan and implement. Many travel decisions therefore might be interpreted as provoked by a more-or-less planned strategy of implementing tasks of a personal project.

The aim of this paper

This paper has a conceptual character and shall invite colleagues in the field of travel behaviour research to discuss the "travel as a function of projects" approach. First empirical evidence is presented; however, we will not provide any econometric modelling of observed data at this stage. The paper rather provides working hypotheses and a behavioural model. Furthermore we will identify the relationship with other strands of analysis. We hope that this work will initiate a broad discussion about the viability of the concept and its operationalisation.

This paper is organized as follows: We start with some general notes and hypotheses about the idea of projects and travel (2). Section 3 then presents an existing general model of motivation, planning and action which we amended by aspects of personal mobility. The following section provides results of an initial survey to capture people's involvement in projects, their planning process and mode choice. The final section discusses the interactions with a selection of related approaches, directions for future methodological work and implications for transport planning and policy.

2. DAILY LIFE, PROJECTS AND TRAVEL: FROM THE INTERCONNECTEDNESS OF ACTIVITIES AND TRIPS

The implementation of personal projects usually provokes activities and travel over a prolonged period of time. Longitudinal aspects of individual travel such as the routines and the variability of activity and trips have received “new” analytical attention over the last 10 to 15 years (see e.g. Pendyala, 1999; Zhou and Golledge, 2000; Schlich, Simma, Rüssli and Axhausen, 2002; Schönfelder, 2006; Elango, Guensler and Ogle, 2007). One of the principal results of those analyses was that there exists a strong antagonism of routines and variety seeking in travellers’ time-use and travel (see e.g. Schlich, 2004; Schönfelder, 2006).

Daily life and day-to-day travel behaviour however are more than routine and the departing from it; many activities are related to each other as a result of temporal and spatial requirements and preferences as well as underlying planning processes. The interconnectedness of activities might have several reasons: In general, particular activities are ‘naturally’ related to each other because their origins are fixed commitments, such as work, education or commitments in leisure time. Another example for the inherent structure of activity participation over time is location and the proximity of spatial opportunities. Home and its environment for example “absorb” certain types of activities, executed at relatively similar times, with similar durations, mode choice or expenditure. Research shows that the structure of human activity spaces is multi-focal with isolated destinations as well as spatial activity clusters (see Schönfelder, 2006). Expanding the spatial proximity perspective by temporal constraints, this leads to the notion of activity and trip chaining behaviour which is probably the most obvious form of activity interconnectedness.

Another reason for ‘activity organization and structuring’ (Pred (1981) talks of “activity bundling”) is the interconnectedness of activities and trips subject to an implementation strategy of a “personal project” (see Pred, 1981; Axhausen, 1998; 2005). Projects – even if people usually do not use this term explicitly for their various undertakings – are fundamental elements of daily life. Searching a new job, renovating an apartment or house or simply planning the next holiday are distinct ‘building blocks’ of life with an often identifiable start and end point. These projects involve a particular outcome or result which has a more or less important meaning for the person and her social contacts. Personal projects have different time horizons – depending on what outcome (goal) is expected or sought – and are often implemented in parallel with other projects of different characteristics.

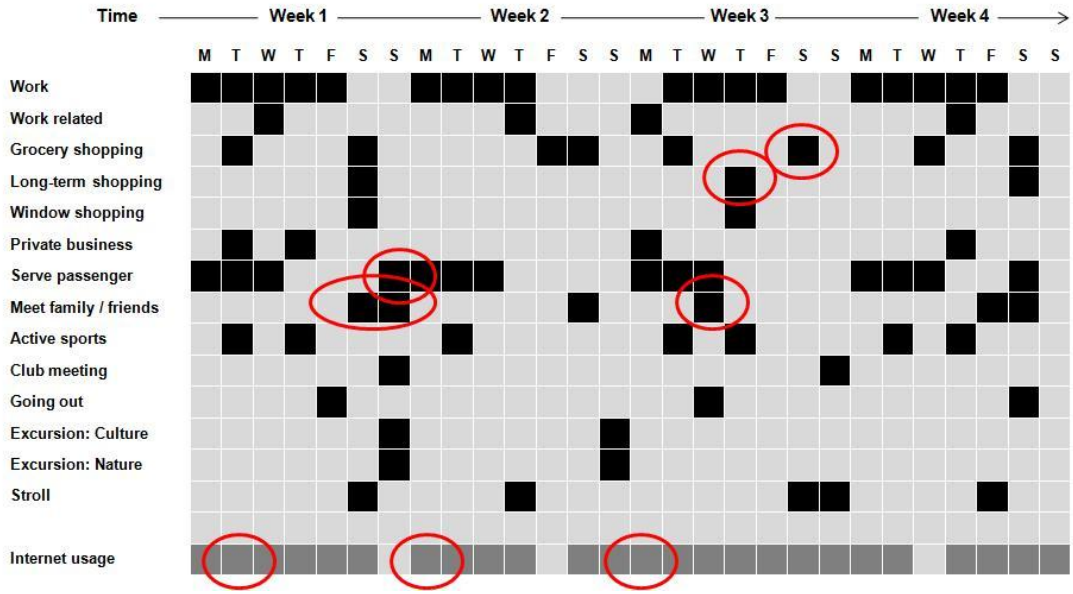
If activities involve travel, travel patterns and choices vary considerably within the time frame of a project: Buying a new home might require a car trip to a potential site in the countryside; it might however cause an underground ride

to a bank's office in the city centre in order to get a loan. Travelling for projects therefore involves diverse purposes and requires the usage of several modes.

Besides, most projects require planning, not only temporal but also financial as well as the coordination with partners, family, colleagues or friends. As daily life is not entirely foreseeable and independent of the decision making of others, projects – or better: the execution of activities related to them – show a great amount of re-scheduling and spontaneity. Analytically, personal projects and their travel potential consequences have a predictable as well as non-predictable element.

Figure 1 represents a 6-week period of activity-travel behaviour of a fictive person. The figure shall illustrate the embeddedness of project related activities (marked by circles) into the day-to-day behaviour of individuals. Activities evoked by projects usually complement and interact with commitments which cannot be recalled in the short- and medium-term. These commitments include locations such as home or work place, the availability of vehicles or public transport tickets, but also private and business relationships or networks which shape people's requirements as well as desires to travel.

Figure 1: Fictive individual out-of-home activity pattern over time and activities related to the project "organization of a big family event" (circles))*



* Black shading indicates execution of respective activity type at least once a day.

In the context of 'activity-based analysis' to travel, project related activities usually induce travel (at least if the activity cannot be executed at only one place or by information and communication technologies – ICT). However,

beyond the fact that a personal project causes trip making, travel itself is an important precondition of the implementation of projects. Hence, the exciting aspect of our idea to define "travel as a function of projects" is the two-way approach to analysis: On the one hand, travel behaviour emerges as a result of the particular requirements of the projects. On the other hand, the traveller's opportunities in time and space (car availability, household location etc.) are without doubt a determinant factor of how life projects can be managed. As some personal projects and their requirements even dominate long-term decision making, they might encourage or force travellers to adapt their "level of mobilisation" or set of mobility tools (refs) or even take locational decisions – which goes beyond the day-to-day level of mobility.

Some hypotheses concerning projects, activities and individual mobility

Having described some general aspects of the 'projects and travel idea' in brief, a variety of summarising working hypotheses can be developed:

- Projects are structuring elements of daily life related to personal goals of different levels of importance.
- Projects have an identifiable result which corresponds to the personal goals.
- Projects underlie a hierarchy of priorities according to the priorities of goals but also according to the temporal and spatial constraints people are subject to.
- There exists "interaction" between the implementation of projects in terms of planning and the achievement of goals.
- More important projects might evoke sub-projects.
- The time horizon of projects differs; short-term as well as long-term projects exist paralelly.
- Postponements, cancellations and adaptations of projects occur.
- A majority of people have distinct projects in the sense described above.
- Projects are linked to a range of activities which are project specific.
- Projects usually require a large share of planning and scheduling of associated activities as well as the coordination with social contacts.
- Personal goals and therefore personal projects might overlap with those of others or even be same for different people.
- Projects as a framework for inter-connected activities induces travel demand (however, most projects also evoke activities which do not require travel between places).
- The "how", "when" and "where" of activities related to personal projects is tied to people's long-term 'mobility opportunities and constraints'.

- Projects might encourage travellers to take long run decisions concerning mobility tool ownership or even household location. Hence, *personal projects might be decisive for travel.*

3. GOALS, PROJECTS AND ACTION: EXTENDING NUTTIN'S MODEL OF HUMAN BEHAVIOUR

The question how human behaviour is motivated has been a fundamental concern in behavioural sciences, cognitive and social psychology for decades (see e.g. Sorrentino and Higgins, 1986). Travel behaviour research has adopted several theories from this area to develop models of activity and travel behaviour (see e.g. Gärling, Gillholm and Gärling, 1998; Bamberg, Ajzen and Schmidt, 2003; Miller, 2005a).

This chapter will provide a conceptual model, which exhibits the explicit relationship between personal goal setting, project planning and activity-travel behaviour. It builds on the work of J.R. Nuttin who proposes a model of human behaviour, which has its focus on a "dynamism of human functioning".

Extending Nuttin's model of motivation, planning and action

The Belgium psychologist Joseph R. Nuttin (1909-1988) extensively analysed the determinants and interactions of learning, motivation and personality[1]. The model we apply in this paper (Nuttin, 1984) basically reveals the cognitive roots of general human planning and decision making. As most behavioural psychologists Nuttin also recognized human needs as a prerequisite of motivation and as the drivers of human behaviour. Thus Nuttin's approach is in line with e.g. Maslow's theory of a hierarchy of needs (1970). However, Nuttin criticises that many approaches to explain the motivation of human behaviour are oversimplified by the traditional concept of stimulus – response. Nuttin argues that behaviour is directed to goals and future achievements mediated by conscious planning processes.

Nuttin's model contains a three-stage process of turning needs into goals, planning and action (Figure 2). The first stage or step involves the transformation of vague needs into 'focussed needs' or goals. Nuttin's main proposition here is that the perception or cognition of motivational states (i.e. needs) initiates a dynamic process of goal setting and as a consequence also planning and action[2].

Motivational needs activate people's perceptual and motor system as well as their cognitive potential, i.e. it makes people think, imagine or explore. Hence, needs can be defined as the precondition or an impulse for individual goal definition. Nuttin suggests that people are in a continuous "pre-behavioural

[1] See http://ppw.kuleuven.be/jrnuttin/bio.html

[2] Behavioural sciences and psychology define different kinds of needs and motivations, however in this context social motivations are meant rather than 'organismic' or physical needs such as hunger. A further approach for example is the distinction by "'intrinsic" and "extrinsic" needs and related goals, i.e. essential individual needs independent of any other person or activity (such as autonomy, competence or relatedness), and needs motivated from outside the individual (money, punishment etc.). This discussion can be followed at Deci and Ryan, 1985 or Ryan, Kasser, Sheldon and Deci, 1996.

stage", i.e. they "feel" a permanent subconscious demand for achieving new (long-term) goals. Goals are usually transmitted by culture but also by the interpersonal context of the individual, i.e. by the (autonomous) support and involvement of important social contacts (parents, managers, coaches etc.) (Ryan, Kasser, Sheldon and Deci, 1996).

From a procedural point of view - which is Nuttin's original concern -, goals and the path to implement related projects are developed or adjusted according to the specific outcome and the expectation regarding the ability to achieve them. Beyond that, people tend to develop several goals parallelly with different levels of importance. A hierarchy of goals materialize on the daily level where different actions (activities) compete with each other.

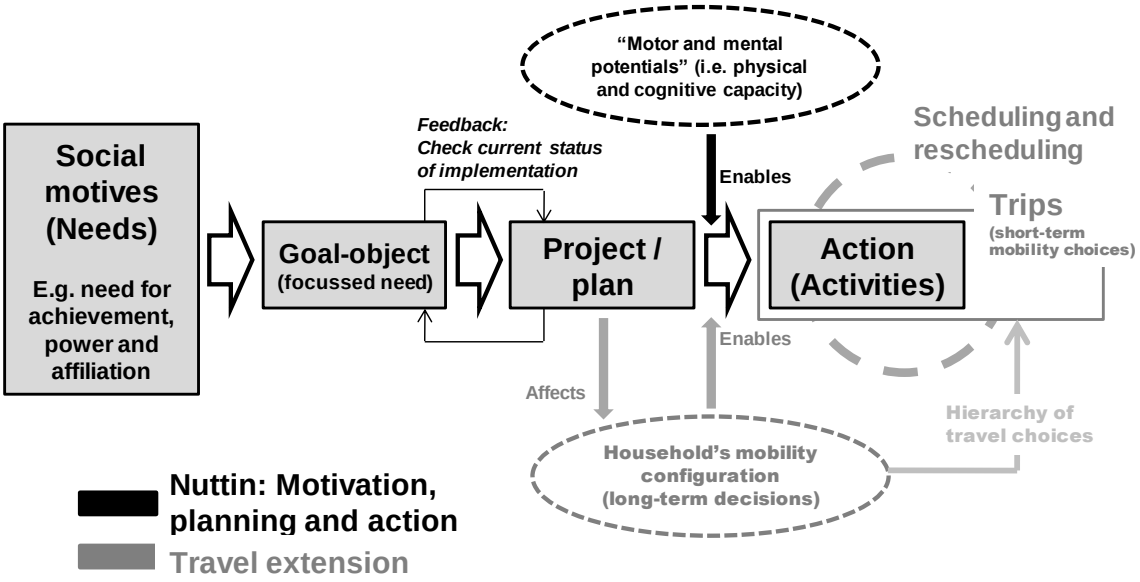
Nuttin stresses that the cognitive process which leads to the definition of goals is described as highly creative, efficient and personality developing. Furthermore, as the cognitive process does not underlie any spatial or temporal limitations, people are able to develop and test a wide range of possibilities in their imagination. Clearly, these possibilities need to be evaluated at the level of reality when it comes to implementation.

The second step in Nuttin's model is the construction of behavioural projects or plans to achieve personal goals. The underlying process in this stage is described as similar to the process of goal setting. Again, the cognitive functions are activated and behavioural possibilities are tested or manipulated in imagination. Nuttin describes this step as a "cognitive dynamic channelling", i.e. basic human needs are developed into a nested network of possibilities and different paths to achieve one's goals. This step also contains a permanent evaluation of the level of goal attainment which influences project planning as well as the adaptation of the goal itself.

Finally, the cognitive processes of the first two steps are turned into reality and execution at the action stage. Goal sets are reached and projects are finalized by actions which are part of the overall process. Nuttin emphasizes that all stages belong to the same interrelated process of behaviour – in other words: thinking, planning and acting usually interact and are part of an inherent dynamism of behaviour.

(Note that the figure shows an activity scheduling and re-scheduling process attached to the last step of planning and action (right side of Figure 2). This process is not explicitly part of Nuttin's concept nor of our model of long-term mobility; however, the idea is that project related activities feed into the mid-term and short-term activity planning and scheduling process (more on scheduling in the last chapter)).

Figure 2: Nuttin extended: Motivation, planning, action and travel (behaviour)



Extending Nuttin's model

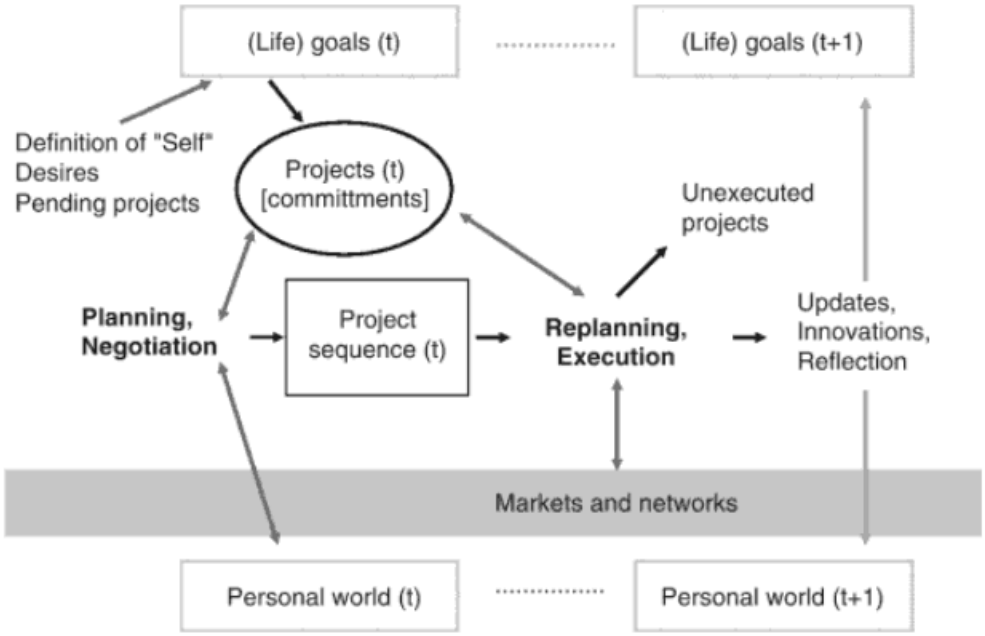
Our extension to Nuttin's model (see light grey elements of Figure 2) is linking long-term decision making in travel mainly at the transition from behavioural plans to actions. We propose that there exists an interaction of the long-term household's mobility configuration (i.e. the availability of mobility tools, the household location etc.) with the design and planning of projects. This interaction is two-way: 1) the requirements of especially long-term projects will affect people's propensity to e.g. equip their household with adequate means of transport to implement the related tasks. Another of such effects would be the long-term decision to re-locate, e.g. to better plan and implement the project to reach a certain career step. 2) The reverse interaction concerns the planning process and the scope of the project. In addition to the individual "motor and mental potentials" which Nuttin in his original model defines as an enabling factor to create and plan projects, the mobility configuration of households is defined as another limiting or facilitating precondition.

This two-way amendment of Nuttin's model now links a long-term perspective of personal travel with a consistent theory of goals and related projects. We argue that – at least part of – individual travel behaviour in the long-run can be explained by the inherent goal orientation of human beings.

If we extend the perspective from one project to a comprehensive perspective of individual travel behaviour over the life-cycles and the interaction with the traveller's environment and social contacts, we can develop models such as

shown in Figure 3. Axhausen (2007, 182) describes his dynamic modelling framework as follows: “In any one period these projects need to be sequenced to provide a reasonable load and prioritisation. This planning requires negotiation with others, as many projects will depend on synchronization with, input of, presence of or permission of others. Again, the interaction with still others in the markets and networks during execution will require adjustments and changes, including the abandonment of certain projects and project elements. This experience will update and expand the individual’s personal world[3] but also shape the set of life goals pursued in the next time interval.”

Figure 3: Modelling the individual’s longer term dynamics



Source: Axhausen (2007)

[3] Another often used term fort he traveller’s personal world is ‚mental map‘. According to Axhausen’s definition of the term ‚personal world‘, it comprises not only the knowledge of geographic space but also types of activities, the when and with whom of activity execution and ‚authority constraints‘ (Hägerstrand) such as opening hours (see e.g. Axhausen, 2007 for more details).

4. SOME FIRST EMPIRICAL EVIDENCE: A WEB-BASED SURVEY

Having described the conceptual background of our approach, this chapter provides results of an initial web-based survey to test the working hypotheses of Chapter 2.

The survey was carried out in summer 2009 as a voluntary and anonymous survey with colleagues of one of the authors' research institutes[4]. The survey focused on the following questions:

- Which long-term and short-term projects were recently planned and implemented?
- What was (is) the time horizon of the respondents' projects?
- Which activities were (are) involved?
- When were the activities mentioned conducted over the course of the project duration?
- Which modes of transport were used to satisfy the activity demand connected with the project's aim?

Survey description and findings

The web-survey started with an introduction into the research purpose and definition of the term 'project' analogous to the definition elaborated above. The questions (forms) had a multiple choice character and were mainly standardized which simplified the responses (Figure 4). At the end of survey, selected socio-economic information was collected.

Figure 4: Initial web-based survey question form

The sample consisted of 54 respondents of which about a half were

[4] See http://ww3.unipark.de/uc/W_UniWien_Schoenfelder_test/2703/ fort he survey instrument (in German)

academics. The sample composition was as follows:

- 56% male
- 13% in the 18-25 years age-group, 39% 26-40 years, 44% 41-60 years and 4% older than 60
- 67% working full-time
- 28% 1-person-households, 31% couple households and 37% family households
- 74% living in the City of Vienna
- 60% living in households with at least one car
- 72% owning a public transport season card

As the sample size is very small, we refrained from a deeper analysis of related effects. Some interesting examples of group-specific behaviour will however be mentioned in the text.

We pre-defined a selection of long-term and short-term project types to be characterized by the respondents. Open answers and the definition "own project types" were possible and desired, though. The pre-defined project types were:

Long term projects

- Renovating a house or apartment
- Searching a new apartment or house
- Searching a new job
- Organising a bigger family party
- Bought (leased) a new car
- Preparation of a sports competition
- Preparation of an exam
- Reach a certain career step

Short-term projects

- Planning a holiday trip
- Planning a hiking trip with friends
- Inviting family/friends home (for a meal)
- Buying something "bigger" (piece of furniture, electronics etc.)

Results

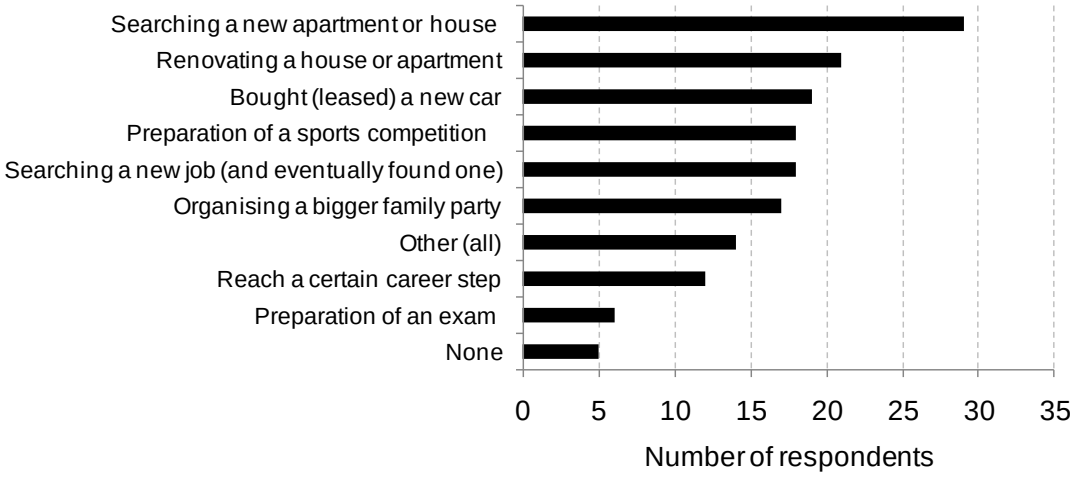
The first interesting result was that the number of respondents having had no (!) long-term or small project over the last period is considerably small (Figure 5). Only about ten percent state that they haven't had any bigger project for five years, only one respondent did not have any single smaller project recently. This confirms our hypothesis that projects are a constitutive element of daily life for a great majority of people.

Moving house was by far the most mentioned long-term project followed by the other pre-defined project types of about the same frequency. Other long-term projects (based on open answer categories) involved “getting a child” (4) and “planned and made world tour” (3).

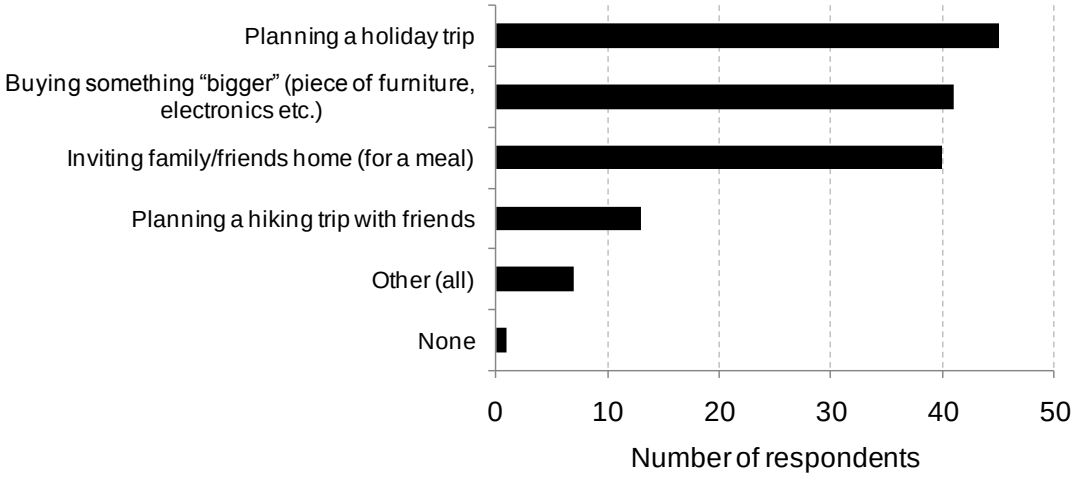
The project types “planning a holiday trip”, “buying something bigger” and “inviting family or friends home for a meal” were the ones most often stated as short-term projects. Other personal projects (open answers) comprised ‘organised a smaller family party’, ‘organisation of a political party's event’ or ‘preparations for the sale of a house’.

Figure 5: Projects stated to be implemented

Long-term projects implemented over the last five years



Recent short-term projects

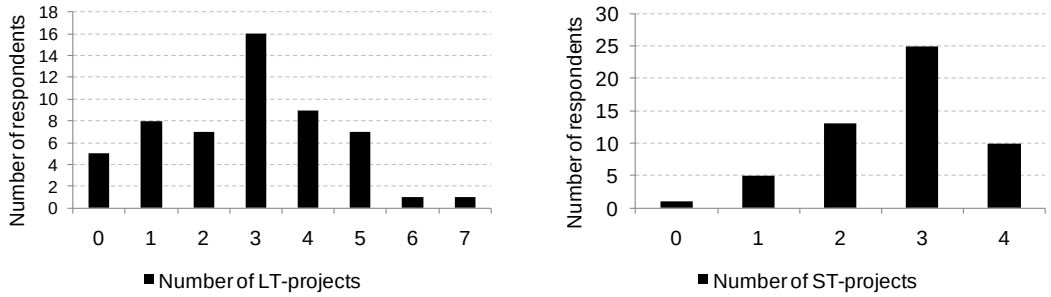


The number of projects per respondent varies from 0 to 7 for long-term projects and 0 to 4 for less comprehensive (Figure 6). The mean is 2.85 (Std.: 1.65) and 2.70 (Std. 0.94), respectively. This finding should however not be

misinterpreted in the sense that the implementation of the projects was necessarily simultaneous. There was only little variation in totals by most socio-economic variables. Nonetheless, it was found that those respondents under 41 state a significantly greater number of long-term projects than their older counterparts. The mean for those under 25 is 3.86 (Std.: 1.35) and the one for those between 26 and 40 is 3.24 (Std.: 1.55). Even if there is the mentioned limitation in interpreting the results, one can conclude that project involvement decreases with age or ongoing life-cycle. This is intuitive given that most major life goals are developed and consolidated in the first half of people's life time.

Apart from the variation in the number of projects by age group we also find differences in the types of projects implemented (Tables 1 and 2) – in particular for the long-term undertakings. The participation in "moving house projects" and "searching a new job" decreases considerably with age which again supports the notion of consolidation over the life course. The same holds for "preparing an exam" which is related to education and studies. "Renovating an apartment or house" in contrast obviously requires more life experience and resources as this project type was stated to be implemented mainly by those 26 to 40 years.

Figure 6: Number of stated projects by respondent*



* Note: Not necessarily implemented simultaneously

Table 1: Share of long-term projects implemented by age group [%]

	18 to 25 years	26 to 40 years	41 to 60 years	>61 years
N [-]	7	21	24	2
Renovating a house or apartment	29	48	33	50
Searching a new apartment or house	86	62	42	0
Searching a new job	57	43	21	0
Organising a bigger family party	43	29	13	0
Bought (leased) a new car	14	29	38	50
Preparation of a sports competition	43	19	46	50
Preparation of an exam	86	43	13	0
Reach a certain career step	29	5	13	0
None	0	10	13	0

Table 2: Share of short-term projects implemented by age group [%]

	18 to 25 years	26 to 40 years	41 to 60 years	>61 years
N [-]	7	21	24	2
Planning a holiday trip	86	81	83	100
Planning a hiking trip with friends	14	33	21	0
Inviting family/friends home (for a meal)	71	86	67	50
Buying something “bigger”	71	81	79	0
None	0	0	4	0

The respondents were then asked to provide details of one long-term and one short-term project from the list of project types given in the introductory question. The range or project types selected comprised almost every category provided. Most of the projects were finalized.

As expected, the (approximated[5]) mean duration of the projects varies according to the extent of goal and the complexity of implementing the related tasks (Tables 3 and 4). The mean – not controlled for the fact that some of projects were not yet finished – of long-term projects ranges from about three months for “buying a new car” to more than a year (“reach a certain career

[5] Approximated by mean of privided category of duration.

step”). The mean duration of the less comprehensive projects was between 3 (“organizing a hiking trip”) and 15 days (“planning a holiday”).

Table 3: Duration of long-term reported projects

	< 3 months	3 to 6 months	6 to 12 months	More than 1 year
Renovating a house or apartment	3	3	4	3
Searching a new apartment or house	5	4	1	4
Searching a new job		2		1
Organising a bigger family party	2		1	
Bought (leased) a new car	5	2		
Preparation of a sports competition			2	1
Preparation of an exam			1	1
Reach a certain career step				1

Table 4: Duration of short-term reported projects

	A few days	1 week	1 week to 1 month	More than 1 month
Planning a holiday trip	6	7	7	4
Planning a hiking trip with friends	4			
Inviting family/friends home (for a meal)	3	1	1	
Buying something “bigger”	8	2	3	3

Table 5 and Table 6 indicate which activities were directly linked to the projects reported. Comprehensive projects such as “renovating a house/apartment” and “searching a new home” involve a wide range of activities which have direct consequences for out-of-home travel. Apart from the activities “shopping”, “borrow something” “administrative” activities and “getting advice somewhere” social activities (“meeting family or friends”) belong to many of the long-term projects stated. This confirms our expectation that most personal projects require the coordination with others. Similar results can be found for the short-term project types. The respondents report however fewer activities to be executed in the context of long-term education and career development projects. Given the usual strategy to reach educational and career goals and the fact that the survey instrument did not offer pre-defined obligatory (regular) activity types, this outcome could be

expected. It is however likely, that activities related to these project types strongly overlap with day-to-day activities (or fixed commitments) such as work. A precise distinction is difficult at this point.

Table 5: Activities involved in long-term projects

		Projects							
		Renovating a house or apartment	Searching a new apartment or house	Searching a new job	Organising a bigger family party	Bought (leased) a new car	Preparation of a sports competition	Preparation of an exam	Reach a certain career step
Activities	Shopping	13	9		2	3		1	
	Compare prices	13	1		2	6			
	Borrow something, pick it up or get it back	9	5	2	1	2		2	
	Administrative	9	12	2	1	4		1	
	Job interviews	1	2	3					
	Getting advise	9	1		2	7	1		
	Meet family or friends	6	6	2	2	2		1	
	Visiting something	8	12		1	3			
	Serve passenger	7	4			2			

Table 6: Activities involved in short-term projects

		Projects			
		Planning a holiday trip	Planning a hiking trip with friends	Inviting family/friends home (for a meal)	Buying something "bigger"
Activities	Shopping	13	2	4	12
	Getting advise somewhere	4	1		10
	Compare prices	8		1	12
	Administrative				2
	Meet family or friends	12	1	1	1
	Visiting something	2	1	1	3
	Serve passenger		1	2	1

Table 7 illustrates the temporal distribution activities within the framework of long-term projects. Activities which were stated to be part of the project in the previous question where asked to be labelled by the categories (executed...) "continuously", "at the beginning", "in the middle" or "at the end" of the project process. The results basically point to the realised sequential structure of projects (note that we did not actually ask for the planning and scheduling of tasks). In spite of the fact that many activities are executed on a continuous basis, we also find distinct temporal priorities based on specific preferences and requirements. This confirms our notion that projects widely follow a specific logic of activity execution – despite a likely rescheduling over the period of implementation. Take "administrative tasks" as one example (greyly shaded in Table 5): Both project types obviously require a fair amount of administrative work. Whereas for the project type "renovating a house or apartment" the majority of respondents reports that administrative activities are executed at the beginning of the project period, the opposite is true for the project type "searching and finding a new home". The explanation of course is trivial: For the project mentioned first it is obvious that getting all the administrative permissions for renovation is required before the actual work is done. Searching a new home and relocating on the contrary evokes administrative tasks such as signing the rental contract or notifying a change in address during or after moving in.

Table 5: Temporal distribution of activities for the five most reported long-term projects*

		Projects				
		Renovating a house or apartment	Searching a new apartment or house	Searching a new job	Organising a bigger family party	Bought (leased) a new car
Activities	Shopping					
	Beginning	2				
	Middle	3	3			
	End		3		1	3
	Continuing	8	3		1	
	Sum	*13*	*9*		*2*	*3*
	Compare prices					
	Beginning	7	6		1	3
	Middle	1				
	End				1	1
	Continuing	5	4			2
	Sum	*13*	*10*		*2*	*6*
	Borrow something, pick it up or get it back					
	Beginning					
	Middle	1	4	2		2
	End		1		1	
	Continuing	8				
	Sum	*9*	*5*	*2*	*1*	*2*
	Administrative					
	Beginning	**8**	4			
	Middle		1	1	1	
	End	1	**6**	1		4
	Continuing		1			
	Sum	*9*	*12*	*2*	*1*	*4*
	Job interviews					
	Beginning			1		
	Middle	1	1	1		
	End			1		
	Continuing		1			
	Sum	*1*	*2*	*3*		
	Getting advise					
	Beginning	6	4		1	1
	Middle		2		1	2
	End		1			1

Continuing	1	2			3
Sum	*9*	*10*		*2*	*7*
Meet family or friends					
Beginning	2	4			
Middle	1	1			
End				1	
Continuing	3	1	2	1	2
Sum	*6*	*6*	*2*	*2*	*2*
Visiting something					
Beginning	4	7		1	1
Middle	2	2			1
End					
Continuing	2	3			1
Sum	*8*	*12*		*1*	*3*
Serve passenger					
Beginning	1				
Middle		2			
End		1			1
Continuing	6	1			1
Sum	*7*	*4*			*2*

* Note that single numbers need not necessarily to sum up to totals of activities. Missings were not imputed.

The question of how decision-making is made within the household context is an important forecasting and modelling issue in travel behaviour research (Simma 2000; Gliebe and Koppelman 2002, 2005; Srinavasan and Bhat 2005, 2006). The results of our small survey show that in project contexts coordination with household members but also with ‘external’ contacts is an important characteristic. Tables 8 and 9 indicate that there was considerable coordination and planning necessary to implement the tasks of almost every project reported and for almost every respondent. This is true not only for those respondents living in couple- or family-households (Table 8) but also for people living on their own (Table 9). Even “buying something bigger” as a relative ordinary project type is often negotiated with important social contacts. The data also suggests (not shown in the tables) that coordination often involves not only one person (or person group) but several – this is in particular the case for long-term personal projects which might even overlap or be identical with projects of others in or outside the household.

Table 8: Coordination with others: Share of answers regarding the total number of respondents reporting the long-term project... [%]; Respondents living in couple- or family households

	Projects				
	Renovating a house or apartment	Searching a new apartment or house (and eventually moved in)	Organising a bigger family party	Bought (leased) a new car	Preparation of a sports competition
With nobody	0	14	0	0	33
Partner	92	57	100	100	67
Other HH member	54	29	67	29	33
Relatives (non household)	23	29	0	29	0
Friends	31	29	33	29	33
Colleagues	0	0	0	14	0
Other	23	0	0	0	33
N	13	7	3	7	3

Table 9: Coordination with others: Share of answers regarding the total number of respondents reporting the short-term project... [%]; Single-household respondents

	Projects	
	Planning a holiday trip	Buying something “bigger”
With nobody	0	14
Partner	80	14
Relatives (non household)	20	43
Friends	40	29
Colleagues	40	0
Other	0	14
N	5	7

Finally, Tables 10 and 11 show the ranking of travel modes reported to be used for the different project types. Clearly, in average car usage dominates almost all types of projects as at least one personal vehicle is available in the majority of the respondents' households. However, public transport – which has a high quality in the survey region (i.e. Vienna) – is the preferred mode for those projects which are mainly implemented by younger respondents whose share of car availability (appr. 30%) is below the sample average.

Table 10: Rank of travel modes for short-term project reported for details

	Projects						
	Renovating a house or apartment	Searching a new apartment or house	Searching a new job	Organising a bigger family party	Bought (leased) a new car	Preparation of a sports competition	Preparation of an exam
Car	1	4	2	1	1	1	2
Public transport	2	1	1	3	2		1
Taxi	3	6			3		
Bicycle	6	3			3	1	2
Rental car	5	6			3		
Walk	2	2	2	2	3	1	2
Other	3	5					
No trips at all	3	5				1	

Table 11: Rank of travel modes for short-term project reported for details

	Projects			
	Planning a holiday trip	Planning a hiking trip with friends	Inviting family/friends home (for a meal)	Buying something "bigger"
Car	2	1	2	1
Public transport	1		3	2
Taxi	4			
Bicycle	4			
Rental car				4
Walk	3	2	1	3
Other	4			
No trips at all			4	

Summarising the results of the initial survey on projects, planning and travel these points should be emphasized:

- Personal projects are part of almost everybody's life.
- Project participation (intensity and type of projects) varies with people's life-cycle.
- The duration of projects depends on the complexity of tasks and the importance of personal goals.
- Projects evoke activities which underlie a project-specific temporal structure and a natural logic of tasks.
- Coordination with social contacts is an inherent feature of almost all projects. Coordination within households is the dominating pattern.
- The contents of projects imply a specific mode choice. Besides, there is a distinct relationship between respondents' life-cycle membership, mobility tool availability and project type.

5. THE ‘PROJECTS AND TRAVEL’ IDEA IN THE CONTEXT OF EXISTING APPROACHES AND IMPLICATIONS FOR FURTHER METHODOLOGICAL WORK, PLANNING AND POLICY

We have elaborated the idea that a considerable share of (most) travellers’ mobility patterns is linked to personal goals and projects. We have shown some first empirical results which widely confirm our working hypotheses presented in Chapter 2. We conclude with relating our concept to existing approaches and with discussing some methodological and planning implications.

Related approaches

Our conceptual model to projects and travel intersects with a range of explanatory approaches to (long-term) individual mobility (see Table 11 for a selection of existing concepts and their relationship with our idea). These analytical frameworks are well established concerning their theoretical background as well as data collection, analysis and – where applicable – modelling. Approaches which try to explore the motivation to travel such ‘mobility styles’, ‘social network geographies’ as well as ‘mobility biographies’ equally emphasize the importance of individual circumstances, life-planning and social capital as potential determinants activity-travel behaviour. Activity-planning and scheduling (models) in turn can be seen as a final element of our conceptual model of goals, projects, activities and travel (see Figure 2).

Let us select the last one from the list of approaches and interconnectionsfor a more detailed reflection: The actual operationalization of the term ‘project’ within travel behaviour analysis has already taken place elsewhere. It is used in a series of papers by E.J. Miller and his colleagues to describe an element of the household activity-travel scheduling model TASHA developed over the last few years (Miller and Roorda, 2003; Miller, 2005a; b; Roorda and Miller, 2005). TASHA (Toronto Areas Scheduling Model for Household Agents) is a microsimulation tool which successfully predicts and analyses activity patterns and related travel for all members of a household for a full day. Within the model framework which is object oriented and rule based, personal and household projects (basically derived from the idea of the activity interconnectedness as well) are a central component or the “primary unit of analysis class in the model” (Miller, 2006).

Table 11: Exemplary existing approaches and their intersection with the concept of "personal projects and their travel consequences"

	Approaches to analyse the motivation to travel			Activity scheduling	'Projects' and household decision making
	Mobility styles	Social networks and travel	Mobility biographies		
Aim and contents in brief	Creation of a typology to travel, leisure and other consumption orientations	Explanation and prediction of physical movements due to people's embeddedness in social networks	Linking personal circumstances and contexts as well as important events occurred in the life course with existing mobility regimes and structures	Description and modelling of 'the planning, adaptation and execution of activities and travel over time and space and across individuals' (Doherty, 2001, 53)	Definition of "projects" as conceptual and technical elements of a household travel-activity scheduling model
Intersection with 'projects and travel' approach	In principle, complex interconnection of life-styles, goal setting and project implementation	Social networks as 1) important background for goal setting (i.e. social capital); 2) as a facilitator to organize and implement personal projects and their activities	Life events as 1) potential impetus in the cognitive process to set new goals or to adapt existing goals and projects; 2) as the final outcome of a personal project (e.g. relocation or change of work-place)	Project related activities feed into scheduling process	Basically same conceptual background of projects as 'organizing principles of dealing with complex behaviour' (ref.) ; differences in scope and consequences
Realization and important references	Various specific household travel surveys implemented and analyses made (see e.g. Götz, Jahn and Schultz, 1997 or Hunecke and Wulfhorst, 2000; Ohnmacht, Götz and Schad, 2009)	Profound conceptual models developed (Larsen, Urry and Axhausen, 2006); several empirical analyses (see e.g. Carrasco, Hogan, Wellman and Miller, 2007; Ohnmacht, 2006)	Various existing surveys and analyses (Lanzendorf, 2003; Beige and Axhausen, 2008; Klöckner, 2004; Prillwitz, Harms and Lanzendorf, 2007; Scheiner, 2007)	Various working models of activity/trip scheduling (see e.g. CHASE (Doherty, 2001; Doherty and Miller, 2000) and successing approaches)	Implemented within the TASHA model framework (see e.g. Miller and Roorda, 2003)

Complementarity and intersections:

This concept intersects with many of the working hypotheses provided in Chapter 2 (i.e. projects as an organisational principle, evocation of activities, hierarchy of priorities, sub-projects, coordination with others etc.). Despite this overlapping conceptual background, the term 'project' remains somehow technical and has some important differences to our proposition. This is mainly due to three reasons: 1) the distinct role of projects as a model element which has some procedural meanings and tasks in the functioning of the scheduler (TASHA); 2) the usage of conventional trip survey data to test the scheduling model and to build project types; and 3) a slightly different definition of the project term. In more detail, the differences of the two approaches are the following:

- The project term is defined in a slightly different way: Miller and his colleagues state that all (!) activities belong to a certain project, that's why for example TASHA technically considers "work projects", "school projects" etc. Pred (1981) takes a similar view by distinguishing between projects based on individual goals and those based on goals of organisations. We in turn tried to stress the differences of commitments (work, school etc.) on the one hand and projects and their activities based on personal (life) goals on the other.
- What is central in our proposition is that certain projects are able to influence the mobility configuration of persons and households. This long-term perspective of household mobility is not explicitly discussed in the TASHA modelling framework. There, the definition and the attainment of long-term or life goals is only of minor importance as the temporal horizon of the scheduling model is short- to medium-term only (one day to a week).

Implications for further work, planning and policy

It is clear that is a long way from the conceptual approach proposed here to its integration into data collection methodology and analysis as well as travel demand management strategies. Even the results of the web-survey shown in the last chapter are at its best a starting point for further empirical work. Nevertheless, we believe that our particular view of individual mobility has important implications for the methodological development in travel behaviour research as well as for planning and policy. Our main argument was that goals and (important) projects might be travel decisive. They are able to influence long-term travel and location choices which shape the day-to-day activity and travel behaviour of persons and households.

Further work will need to prove this hypothesis and the relevant part our conceptual model. Hence, from a methodological point of view, two important questions arise: First, how can appropriate data on personal (life) goals,

projects and related activities be collected? And second, in which way can this information be used and interpreted for transport planning and policy?

The first question is very much a survey challenge whereas contemporary survey design in travel behaviour research does not offer any existing technique which would help to answer this question. Central to “new” data collection efforts is a more detailed definition and description of the ‘social content’ of activities and their mid-/long-term planning by the respondents (as proposed in a similar way for the analysis of social networks and travel by Axhausen, 2008). This includes their social purpose and the importance for personal (life-) goals - which would give us a better idea of which utility can be expected from their execution. Moreover, the list of socio-economic data collected in person and household instruments of (experimental or ordinary) travel surveys obviously needs to be complemented by items which would suitably describe current aspirations, goals and (large) projects of the respondent. Both, the extension of activity descriptions and the additional (self-) characterization of the respondents require as usual a balancing between desirable data availability and a reasonable level of response burden.

The second question touches the tie of ‘projects and travel’ with transport policy and planning. Transport planning practice is currently confronted by a range of challenges which amongst others requires a multi-dimensional strategy of influencing travel choices. Our proposition to consider personal projects in the analysis and forecasting of travel behaviour will help to better identify the determinants of observed choices and means to impact them. One of the possible directions is to integrate the better knowledge of the individual motivation to travel into individualised mobility marketing schemes (for successful examples see Brög, Erl and Mense, 2002; DfT, 2007). By considering the life context (including personal goals to be accomplished) and the “project situation” of travellers in those approaches, we would be able to generate long-term travel solutions beneficially for the individual and her mobility needs, the transport system as a whole and the society. Similar hope is connected with travel marketing strategies based on a detailed categorization of travellers by mobility styles (Gather, Kagermeier and Lanzendorf, 2008).

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