

Daily Mobility in Berlin: On 'Inner Unity' and the Explanation of Travel Behaviour

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The article deals with the process of integration of East and West Berlin by means of the population's everyday mobility. Analysing activity spaces in four small-scale study areas on both sides of the former Berlin wall, there is evidence for significant differences between adjacent areas on both sides of the former wall as well as between different groups within an area. The interviewees' place of origin plays an important role.

The question is, how – on the one hand – groups of persons might be characterised who tend to integrate the respective other half of the city more strongly into their everyday life ('border crossers') or – on the other hand – people still tend to concentrate on their respective half of the city a decade after the fall of the wall ('half-urbanites'). On the basis of spatial behaviour and the attitude towards the city's other half, four groups are differentiated. They are examined by a discriminant analysis as well as on the basis of semi-structured interviews with regard to dominating patterns of interpreting the German unification and their own personal identity. These patterns provide a considerable contribution for a better understanding of group-specific differences in the choice of mobility behaviour.

From these results, consequences are drawn for the explanation of travel behaviour and for the theory and methodology of travel behaviour research. The hypothesis is developed that spatial action may not fully be explained by restrictive factors (infrastructure, distribution of opportunities, socio-demographic factors etc.). Additional factors which are empirically much more difficult to handle, such as attitudes, lifestyles, biographical experiences and long-term spatial orientations, are playing a role. The modelling of travel behaviour is theoretically incomplete by neglecting individual reasons of action. Any prediction of the future transport development might at least partly suffer from this weakness.

keywords: travel behaviour, activity space, German reunification, methodology of travel behaviour research

1. Introduction

Whenever surveys on Berlin's 'inner unity' are published, this is a topic for headlines. Cognitive topics such as norms, positions or opinions are of special interest (e.g., Noll and Habich, 2000; see also Scheiner, 2000 for an overview). Since there are differences between Westerners and Easterners people conclude that there is still a mental wall, also called a "wall in the head". Divergent voting behaviour continues to be a source of doubt as to whether or not the 'inner unity' between East and West (as opposed to the institutional unity, i.e. the integration of political and societal institutions) has in fact made any progress in the decade following political unification.

In addition to that, consumption patterns are rather different if analysed thoroughly. Westerners and Easterners listen to different radio and TV stations, read different newspapers, smoke cigarettes of different brands, drink beer of different brands, listen to different bands and patronise different leisure facilities (Häußermann, 1997). Since there is an advanced secularism in the East there are rituals during the socialisation process unknown to Westerners.

Since severe differences and tendencies of dissociation between the two halves of the country seem to last, the 'inner unity' is a subject of interdisciplinary inquiry in sociology, psychology and the political sciences (online bibliography: <http://www.wiedervereinigung.de>). Cognitive topics such as mutual perception, norms, attitudes or opinions and indicators of the objective life situation (like income, employment, education, security) are of special interest in such studies¹.

Given this widespread interest in the evolving relationship it is all the more curious that there appear to be very few studies on the more fundamental question of socio-spatial interactions between East and West Germans. In the following sections, everyday spatial patterns between the eastern and western part of Berlin are investigated as a contribution to fill the gap. The article is based on an action-theoretical framework and an approach that combines quantitative and qualitative methods. On the one hand, it provides empirical results about daily travel patterns in Berlin. On the other hand it draws some conclusions for the explanation of travel behaviour (primarily in terms of destination choice) on a more theoretical and methodological level. These are of primary interest for transport planners and policy makers either concerned with the explanation of travel behaviour, with urban development in Berlin, or with the socio-spatial integration of East and West Germany.

In the following section, I will create a theoretical framework. Section 3 elaborates the methods applied, while section 4 and 5 present the results. Section 4 is based on data of two standardised surveys, while section 5 focusses on semi-structured interviews. Section 6 draws some conclusions for future research.

¹ See f.i. Staab (1998), the contributions in Berth and Brähler (2000), Noll and Habich (2000), and in the journal 'Aus Politik und Zeitgeschichte', issues 13/1997, 40-41/1997, 51/1997 and 37-38/2002 (download: www.bpb.de). An overview is provided by Scheiner (2000).

2. Theoretical Framework

2.1 Is (Travel) Behaviour Explainable?

In transport planning and research, travel behaviour is usually modelled and forecast by means of simulation models (see for an overview McFadden, 2000; Waddell et al., 2001). These models work on the basis of spatially differentiated data that describe supply structures as well as the population structure within given spatial entities (travel zones).

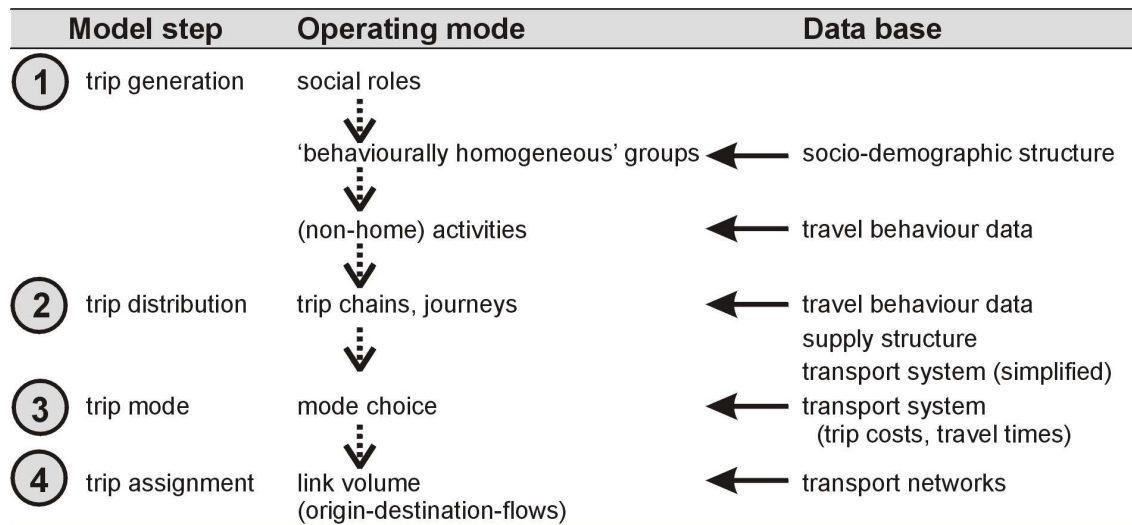


Figure 1. Operating mode of a travel demand model

The figure represents a trip interchange model. In trip end models, steps two and three are inverted. Source: own concept.

The common models are split into four steps (figure 1.). All steps and therefore the functionality of the whole model are based on the assumption that a population may be divided into 'behaviourally homogeneous' traveller groups. The group construction depends on criteria like employment status, gender, age, and car availability (Kutter, 1972). It relies on the assumption that certain social roles prevail within the groups: Employees go to work, housewives go shopping, students go to university. The activities connected to the roles have to be realised at opportunities (like workplaces, shopping centres etc.) and can therefore be distinctly localised. The use of a certain opportunity is (probabilistically) an outcome of the distances between an individual's place of residence and the various opportunities, and the group-specific and activity-specific parameter of 'space resistance'. This train of thought, however, relies on a number of problematic assumptions:

1. Firstly, it is questionable that specific activity patterns may be derived from specific social roles. Already at the beginning of the 1980s the objection was raised that social roles are not behavioural patterns but behaviour *expectations* towards the role holder that he might reject (Dangschat et al., 1982: p13ff). This argument weighs even heavier, the more - in the context of individualisation and pluralisation of lifestyles - individuals are liberated from traditional biographical patterns. Thereby, new patterns of activity and travel behaviour might emerge, caused, e.g., by multiple employment,

'job hopping', specialised consumption needs, spatially expanded social networks etc. (Hilty et al., 2000; Scheiner and Kasper, 2003).

2. Secondly, there are other decisive factors for the choice of a certain destination than the 'classical' restrictions investigated by travel behaviour research. The spatial distribution of activities might also be an outcome of subjective world-interpretations and self-interpretations, as phenomenological sociology and geography have claimed (Buttimer, 1976; Waldenfels, 1985). Hence, it exceeds factors that may be comparatively easily operationalised and modelled, such as transport infrastructure, distribution of facilities, and socio-demographic structures. Another question is (and this goes along with the first point) to what extent socio-demographic features are also shaped by subjective interpretations ('you are only as old as you feel'). The explanatory value of socio-demographics *as such* for spatial action is limited. The weak variance explanation of many a multivariate analysis (see for an overview Lanzendorf and Scheiner, 2004) is an indication of that.
3. In a broader sense, this is not only true for destination choice, but also for mode choice. Although car owners seem to be highly focused on car use and virtually immune to public transport supply (Holz-Rau, 1997; Gilbert, 2000), new, flexible means of transport like car-sharing and 'individualised' public transport might well be capable of breaking this rigid demand behaviour. Costs clearly seem to have an impact on car usage as well (Nielsen, 2001:p22ff; Kloas and Kuhfeld, 2002). Thus, the explanatory power of car availability for car usage is limited and might be understood more adequately by assessing the owner's subjective calculations on his mode choice decisions.
4. Finally, long-term locational decisions and other aspects of residential mobility are closely related to travel behaviour (Scheiner, 2005a). Recent multivariate studies confirm that household relocation seems to have stronger effects on travel behaviour than socio-demographic variables and spatial structures (Kloas et al., 2001). Some more studies conducted in various spatial contexts and with various population groups also provide evidence for the relevance of long-term bonds with former places of residence and places of work (Geier et al., 2001; Scheiner, 2004 and 2005a).

To sum up, travel behaviour is in two ways an outcome of factors that are not adequately considered in travel demand models: (1) by being related to subjective interpretations of social and spatial structures, and (2) by being related to long-term orientations (residential mobility and locational decisions). The latter have recently become a subject of inquiry within transport research and the possibilities of integration into travel demand models are being investigated as well (Waddell et al. 2001; project Intermobil, see <http://www.intermobil-dresden.de/t100/t100.html>). However, the integration of the former into standardised, quantified models will be quite a challenge.

Table 1. Structural (orthodox) and interpretive social research - an ideal type comparison

	structural paradigm	interpretive paradigm
Epistemological perspective	explain	understand
Explanation model	cause-impact relation	meaning of action
Methods	quantitative	qualitative
	etiologic	hermeneutic, interpretive
Research logic	deductive	inductive
Construction of sample	random sample	theoretical sampling
Purpose of empirical research	test of theories	development of theories
Handling of 'constitution of meaning by action'	elimination	reconstruction
Notion of human activity	behaviour	action
Typical connection	cause - impact	reason - outcome
Relationship between researcher and researched subject	predetermination of researcher	relevance system of researched subject
Research process	rigid, static	flexible, dynamic-processual

Source: own concept using Lamnek (1993:p218ff, 258f)

Lamneks comparison relates to qualitative and quantitative research. It is used here with some modifications. The sharp contrast is made only for the sake of distinctness. It should be interpreted as an 'either...or'.

The reason for the difficulties leads to one of the most fundamental questions of the social sciences: the relation between understanding and explaining. This cannot be discussed in detail here. Very simplified, the point is (table 1): Orthodox social research is committed to a positivist epistemological ideal and takes its position outside of its research object (in a way, it takes a bird's eye view). In contrast to that, interpretive social research aims at understanding its object from an inner perspective. In doing so, it takes its position within its research object 'society'.

However, interpretive social research also lays claim to explanatory power in terms of a generalisation of idiographic knowledge. But this claim is not associated with causal thinking. Positivist thinking ascribes action to causes; interpretive thinking ascribes action to reasons.

However, from the inner perspective of social actors one might detect the actors' subjective interpretations of situations and action processes, but the structural conditions beyond the horizon of the actors' experience will remain unknown. For this reason, the researcher's 'bird's eye view' is a necessary element of all (including interpretive) research, although under the premise: "'Understanding' logically precedes 'explaining'" (Luckmann, 1986: p196).

In sociology, the knowledge that social research is part of its object (the society) is widely accepted (Bourdieu, 1982; Giddens, 1984): "Actors, however, have the possibility of choice and may choose in unpredictable ways. If they hear of a theory, they may feel stimulated to refute it by action" (Luhmann, 1976: p507). Due to the natural scientific, technical tradition of transport research this knowledge is less widespread in the transport field. It simply does not go along well with the prevailing emphasis on computability, programmability, 'plannability' and controllability of its object.

As far as travel behaviour is a form of social action, transport research lacks a decisive step to understand travel demand. To phrase it provocatively: Transport research cannot explain travel demand adequately, as long as it cannot understand it. This implies severe difficulties for prognostics.

2.2 Travel Forecast and Transport Development

Forecasting is only possible if one knows (beside the actual value of the variable to be forecast) the status quo and the prospective progression of its key determinants. Even if travel demand models fulfil more practical than theoretical-explanatory tasks, the functionality and therefore the sensitivity of the models to planning measures depend strongly on their explanatory power.

When we regard the history of travel forecasting, we see that it is characterised by notable false estimations. Since the 1950s, the progression of the car stock was regularly underestimated². A 'peak of motorisation' was identified at the horizon (Deutsche Shell AG, 1995) that has never been reached (figure 2), while the development of rail transport (since the 1980s, ship transport as well) was seriously overestimated (ECMT, 1997:p280f).

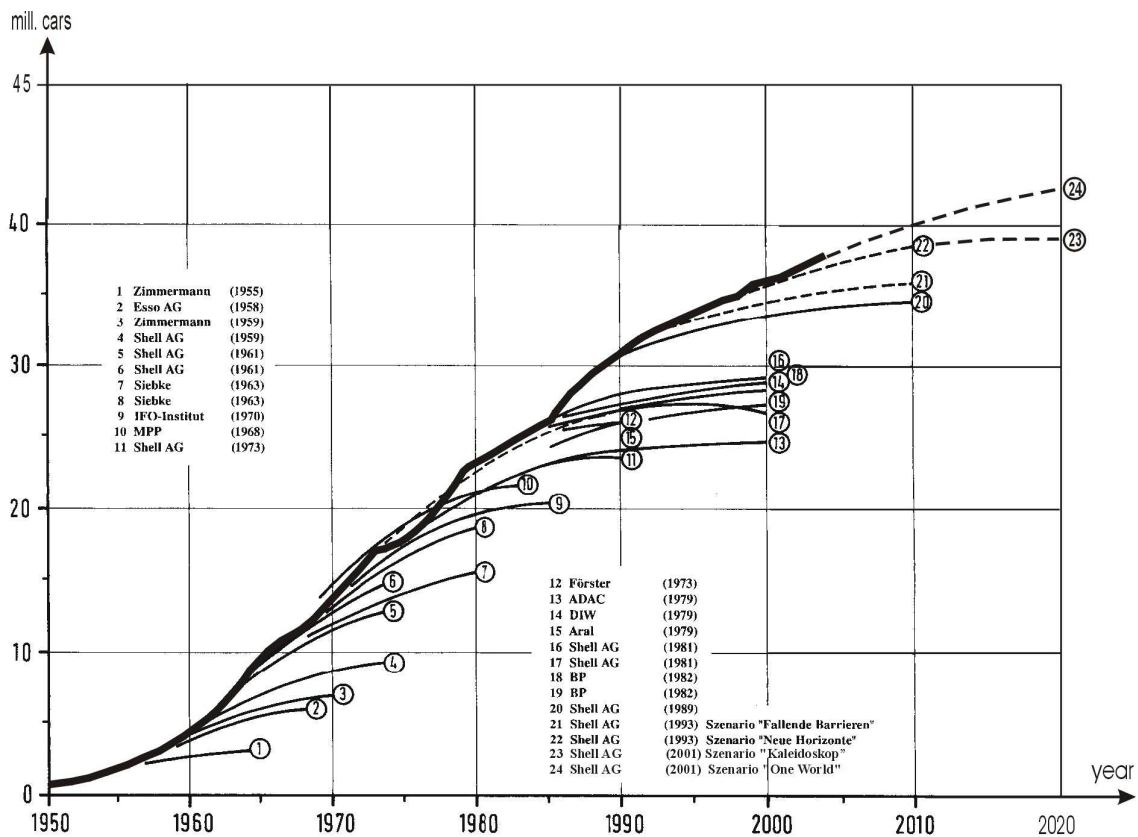


Figure 2. Prognosis and reality: car stock in Germany (old 'Länder')
 Source: Kill (1997), complemented by Deutsche Shell AG (2001), BMVBW (2004).

This observation refers to highly aggregated data. Once spatially, temporally or socially differentiated, the discrepancies between model results and reality are even more pronounced. In particular, research questions that touch unknown territory are subject to the risk of only confirming what can be derived from the model parameters anyway. The parameters that are

² Motorisation is not a synonym for mode use. Because of the close connection, however, it is an excellent indicator.

being varied are partly identical with developments that can be influenced by spatial planning and transport planning (such as distribution of workplaces, shopping and leisure facilities, 'space resistance' etc.). This results in confirming what is already (hypothetically) known and in confirming the relevance of the planner's work.

One can say that recent models of travel demand suffer from certain theoretical shortcomings that are possible causes for false estimations. However, beyond criticism, two points shall not be forgotten:

Any explanation and any forecast are based on a model, even if this model is not forced into a formalised algorithm. Subject-oriented social research is based on models of society as well. These are built on premises and therefore they are not as such more 'realistic' than models of positivist-behaviouristic transport research.

For certain tasks, simulations on the basis of formalised models are indispensable. The said criticism is largely founded on a theoretically guided social-scientific point of view. Transport research, however, is not only a theoretical science, but has practical planning tasks. The latter can only be accomplished by accepting the inherent reduction and simplification.

2.3 Consequences for Research

There are consequences of the above considerations on two different levels. One relates to long-term causes of travel behaviour, such as residential mobility, routines, and biographical experiences. The other relates to subjective patterns of interpretation. Both are briefly outlined in the following.

In spite of the methodical effort, long-term causes for travel behaviour should be investigated more intensely. Little is known about the relationship between residential mobility and travel behaviour although it has been a matter of subject in a number of studies (Simpson, 1987; Waddell, 2001). For instance, Geier et al. (2001) show that the long-established population of the larger municipalities in the suburban space of Berlin has a comparatively strong orientation towards their own place of residence (figure 3). However, the local supply does obviously not have any effect on in-movers ('new suburbanites'). These maintain their job, shopping and leisure orientation towards Berlin. This is equally true for job, leisure and shopping trips. These results are confirmed by a study of Scheiner (2005b) in the region of Cologne. As a consequence for planning, the concept of decentralised concentration seems to save traffic if we regard the total population. However, this might be true for the long-established, but not for incomers. Promoting decentralised central places for incomers might save no traffic at all.

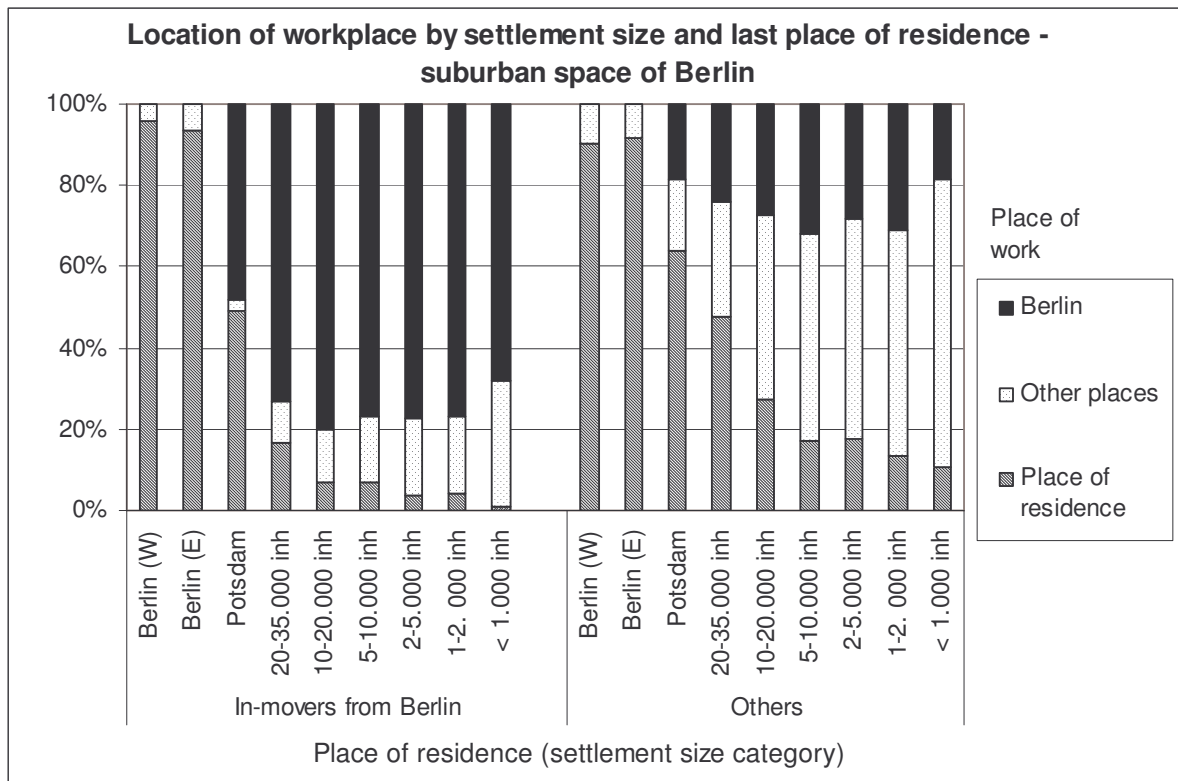


Figure 3. Spatial orientation in Berlin suburbs by last place of residence (job trips)
Source: Geier et al. (2001)

Long-term causes for behaviour also include 'habitualisation'. Although the importance of routines for travel behaviour has been a subject of inquiry for a long time (Cullen and Godson, 1975), the exact significance of routines, their generation and application process, and the consequences for adequate political and planning strategies and measures are largely unknown.

By an analysis of decision situations, Lanzendorf (2001) identified the higher importance of routines for mode choice, as compared to activity choice and destination choice. Bamberg (1996) showed that habits are a significant explanation factor for car use. However, the conscious intention to act correlates strongly with the measured habit ($r=0.64$). Thus, the validity of the variables used is questionable.

The lack of knowledge on routines is not least due to methodical difficulties. Observations record only the visible part of action (the 'behaviour'), but not the rationales, the valuation and decision processes 'behind' behaviour, although there are a few studies trying to capture the activity scheduling process (Lee and McNally, 2003). Interviews and questionnaires presuppose that the interviewee is able to call the questioned topic into his consciousness. Concerning routines, this is doubtful.

The biographical background to certain types of spatial action is essentially unknown. It has frequently been stated that travel behaviour of adults is predetermined by childhood socialisation (Limbourg et al., 2000), although there is no conclusive evidence for that.

Concerning housing mobility, it has been shown that individuals who frequently moved during childhood, tend to move frequently as adults (Wagner, 1989: p163f). In addition, there is some evidence that growing up in a certain spatial environment influences future locational decisions as adults (Bauer et al., 2003).

Interpreting actions, one has to assume that 'action determinants' only become relevant mediated by subjective patterns of interpretation. Consequently, these interpretations have to be considered by the researcher. For instance, the age of a person is not a determinant for his behaviour, but a basis of his age-interpretation: Action is guided by the individual's evaluation of his own capabilities.

Social and spatial frame conditions are subject to an interpretation process as well. However, behaviour within certain 'settings' is normally highly standardised. This might be explained by the '99 percent functioning' of these settings without any actual interaction process (Rhode-Jüchtern, 1999). The interaction on which behaviour is required in a certain setting has taken place in a learning process much earlier. The actual behaviour is anchored as a routine³.

Action-theoretical approaches are a valuable means of research, but they require considerable effort (and expense). Therefore, their necessity has to be scrutinised in each case. They are dispensable if the (potential) reasons and motives of possible ways of action are already known, as well as the relevance of the various frame conditions (social, economic, spatial...). Reasons and motives can then (if necessary) be recorded in a standardised questionnaire. Frame conditions can be either 'put in brackets' and held constant or varied systematically.

This premise is, however, hardly fulfilled with respect to questions concerning travel behaviour (as the above discussion has already demonstrated). In general, one might say: The less is known about the guiding research topic, the more qualitative-hermeneutic methods are necessary to detect subjective patterns of interpretation.

3. Research Design

The key hypothesis for the following empirical studies holds that if people avoid integrating the city's respective other half (i.e. the one in which the place of residence is *not* located) into their everyday life, then this would indicate the existence of an 'inner wall' between East and West.

When studying travel patterns between East and West as an indicator for 'inner unity' one is confronted with the problem that empirical observation of spatial movements cannot by itself provide sufficient grounds for diagnosing trends of either association or dissociation. Such data also has to be interpreted in intentional terms. One has to distinguish between observable behaviour and the motives behind it.

Two key factors for empirical research were discussed above: residential mobility and subjective patterns of interpretation. The first is operationalised by three variables describing the duration of residence in Berlin, the fact whether or not somebody has already moved

³ This seems to undermine points made earlier. Nevertheless, it is important to study the subjective interpretations of frame conditions. Firstly, the argument of their anchorage as routines cannot answer how changes are possible, because changes presuppose shifts in the patterns of interpretation. Secondly, standardisation is only half the truth. Otherwise conflicts would not be possible - these presuppose differences in two individuals' interpretations of a situation.

house between East and West⁴, and the spatial origin (place of residence in 1989: East or West). The second is examined by three different aspects: first, by investigating the role of lifestyles (complementing socio-demographic factors) as subjective dimensions of one's self-interpretations (see section 4.4); secondly, by examining the role of attitudes for spatial action (attitudes are subjective guidelines that shape action without determining it (on the concept of attitude see Verron, 1986)); and thirdly, by a content analysis of semi-structured interviews that are focused on the following thematic fields and related key questions:

- Personal advantages/disadvantages from reunification: Which factors play a role? What are the subjective overall balances like?
- Experiencing the fall of the wall: Was it experienced positively, negatively or in neutral terms? Is it described in an emotional or more dispassionate way? Was there a spontaneous or more hesitant participation in the events (e.g., visiting the now accessible half of the city)?
- Perception of people in the other half of the city: Are they described in a positive, negative or neutral way? Are they described as different or similar in comparison with one's own group? Which attributes are ascribed to them? Are value judgements heavily stereotyped or individually differentiated?
- Social contacts in the city's other half: Do they exist? Are they intense or superficial? Are there East-West conflicts and, if so, how are these being dealt with?
- Activities in the city's other half: The frequency of 'border crossing' activities is a basis for the construction of the groups. Do the actors' subjective views confirm this statistical difference?

Following the outlined approach, a combination of quantitative-standardised and qualitative-hermeneutic methods on the basis of an action-theoretical approach – described elsewhere (Scheiner, 1998, 2000) – was chosen. In June 1998, a random sample of 278 persons in four study areas took part in a standardised survey of their daily mobility and personal attributes such as age, gender, employment, and lifestyle. In addition, 58 individuals were interviewed in more depth with semi-structured interviews to obtain a better understanding of their underlying motive structures. Daily mobility was operationalised by a selection of frequent activities (workplace, education, food and clothing purchases, doctor's visits, leisure activities). For each activity, location, frequency, travel mode, and year of first visit ("when did you visit this particular place for the first time?") was recorded.

According to the key hypothesis noted above, the 'inner wall' between East and West is represented by an avoidance of the city's respective other half during an individual's daily life. An avoidance can, of course, only be postulated if the opportunity to cross the former border is given. Such circumstances can most reasonably be expected in areas near the former wall; thus in places where for instance the nearest shopping facilities are in an adjacent district, that lies beyond the former demarcation line. Following this thought, appropriate study areas are of crucial importance to the validity of the results.

The chosen areas are located in the Berlin districts of Wedding and Pankow on the one hand, and Neukölln and Treptow on the other (figure 4). Both these pairs consist of two adjacent areas formerly separated by the wall. The areas are very small. For most interviewees, the distance between their apartment and the former wall was less than 200 metres, for some interviewees the distance was up to 500 metres. The spatial structure of the areas ensures that

⁴ Relocations within the western part or within the eastern part of Berlin were not regarded.

the use of the respective adjacent district is not prevented by a spatial barrier. Particularly in Neukölln/Treptow, the former demarcation line was already partly 'healed' by new buildings. All areas are centrally located neighbourhoods with good public transport connections. Buildings from the end of the 19th and the beginning of the 20th century are complemented by post-war tenements and new buildings from the last decade.

Complementing this micro-spatial investigation, data from the "Travel Survey Berlin-Brandenburg" are being analysed. This survey was conducted by the Berlin Transport Services around the same time (the summer of 1998). The analysis confirms the results of the micro-spatial study for the city as a whole. As the sample is spatially stratified by travel zones, the data have been weighted to ensure that the population is properly represented. All analyses are confined to adult interviewees whose spatial origin (place of residence in 1989) is known. Only non-home trips with destinations in Berlin are being included. The analysis comprises 32,787 individuals with 72,008 trips recorded by travel diaries for a given day.

4. Results of the Standardised Surveys

4.1 Spatial Action as Intentional Acting

Figure 4 shows the percentage of trips into the respective other half of the city (i.e. East to West or vice versa) among all trips by travel zone. The longer the distance to the former frontier, the more infrequently it is crossed. In the East, the use of the other (western) half of the city is stronger than in the West. This indicates an aspect of the asymmetry of unification: everyday life in East Berlin has been changed much more by the *Wende* than in the West. Thus, spatial orientations in the East have changed significantly more. This is primarily a result of major changes in the eastern job market after the economic collapse⁵ and the higher quantity and quality of shopping facilities in the western part of Berlin.

⁵ Almost every second interviewed employee (44 per cent) in the eastern study areas is working in the western part of the city, but only every fifth to sixth (18 per cent) in the western areas is working in the eastern part.

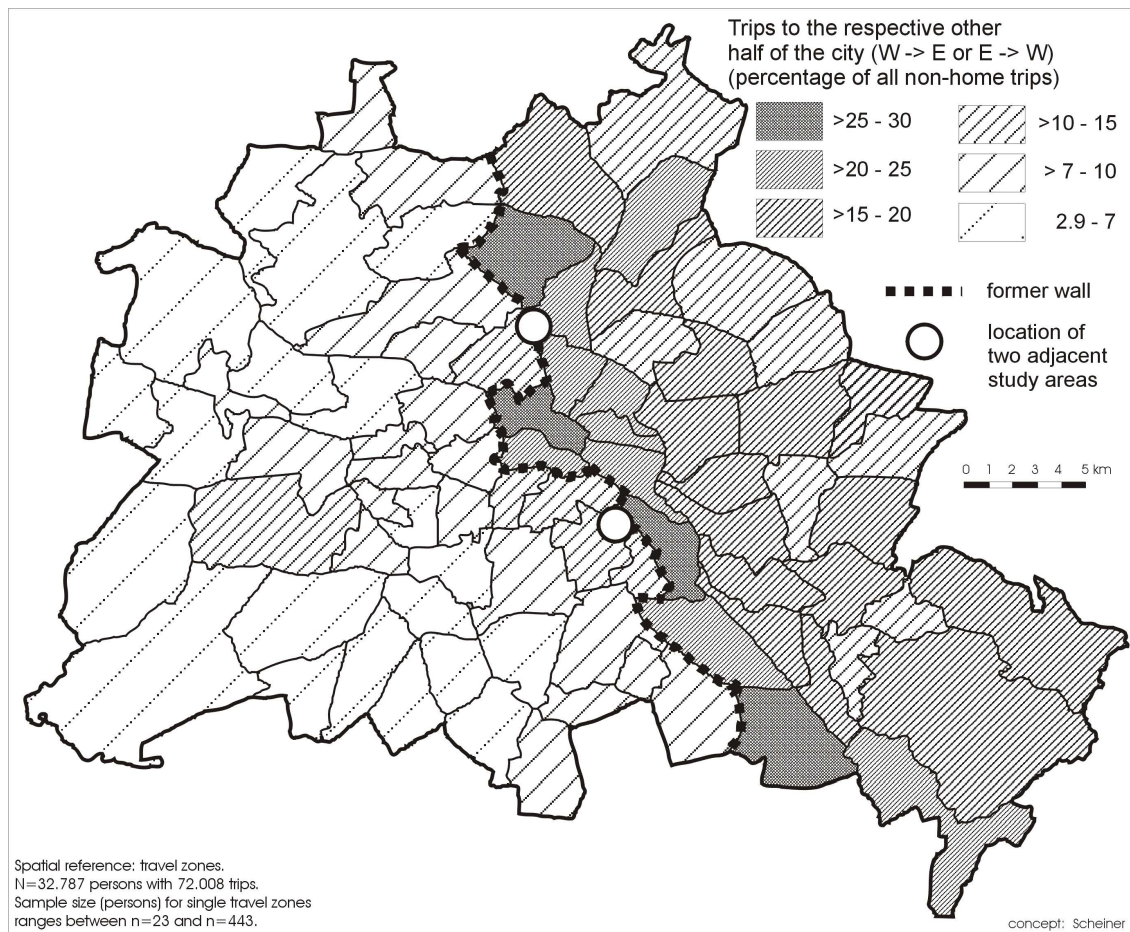


Figure 4: West-East and East-West trips in Berlin by place of residence

Source: own concept, own calculations. Data base: BVG travel survey Berlin-Brandenburg 1998. n=72.008 trips.

However, distance rationality and asymmetry are not the only criteria, as figure 5 indicates. What is more, there are considerable differences in the spatial orientations between long-established residents (people living in their district of residence since 1989 or longer) and newcomers (people who moved to the district after 1989). These differences apply to activities within the neighbourhood as well as to activities in a wider spatial context ('macro-spatial').

The newcomers had to restructure their everyday habits of using urban space, when the wall had already been torn down. Their spatial environment at the new place of residence was no longer a border area close to the wall. Interviewees originating from West Berlin (left column) have a stronger tendency to spend their time in West Berlin than East Berliners (right column), and vice versa.

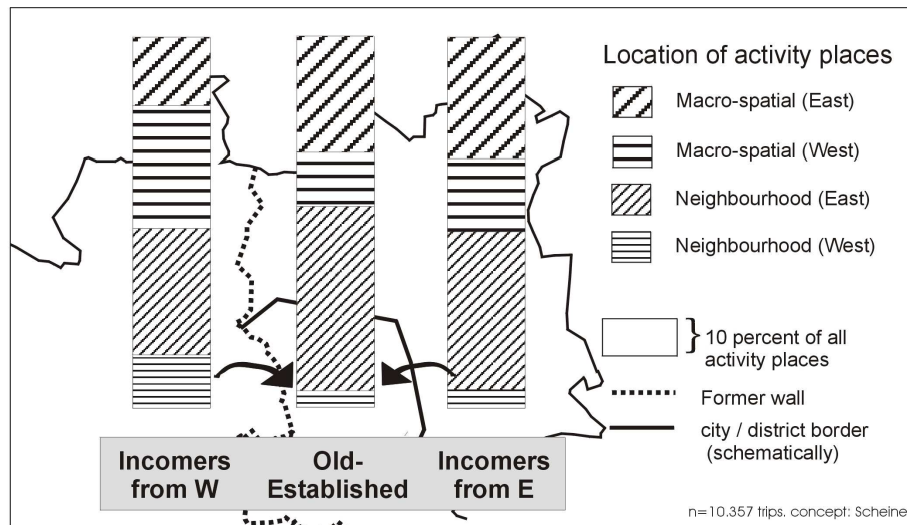


Figure 5. Spatial distribution of activity places by origin and date of migration to an East Berlin travel zone bordering the former wall (schematical figure)

Any activity that takes place in a 3 km circle around the respective study area is regarded as a neighbourhood activity. The comparatively large radius (which far extends the common pedestrian distance) makes sure that differences between West and East *beyond* the circle are not due to spatial orientations relating to the neighbourhood, which might overlay possible East-West differences.

Source: own concept, own calculations. Data base: BVG travel survey Berlin-Brandenburg 1998. n=10.357 trips.

Partly, this is due to patterns of use of urban space, which are maintained after moving house: contact to friends and relatives, the place of work, maybe also the doctor might remain the same over the long term after a change of residence. Leisure activities being undertaken together with friends might be maintained at the same place after moving house. However, the differences in orientation between East and West also find an expression in activity patterns, which are restructured after a migration, such as shopping.

The example of doctor's visits shows that the location of activities is not just an effect of structural conditions or mechanical routine, but also a result of intentional action. Depending on the respective study area, 90 to 96 per cent of the interviewees originating from the half of the city, where the study area is located, visit doctors in this same half. If the interviewee comes from the other half, the share is barely half to a quarter of this (45 resp. 24 per cent). In other words: East Germans visit doctors in the East, West Germans in the West.

In terms of doctor's visits, considerable persistence has to be taken into account. A close relationship between doctor and patient may result in accepting long distances to the familiar doctor after moving house. However, the mentioned inequilibrium remains (with less significance), if only those interviewees are analysed, who changed their doctor *after* moving and after 1989 – i.e. cases, where personal ties from the pre-*Wende* era have no meaning. In a trustful social relationship, such as between doctor and patient, East-West stereotypes still seem to play a major role.

4.2 Short-Term and Long-Term Decisions

The example of doctor's visits indicated that decisions for certain activity places might be persistent for a long time. Table 2 shows that destination choice also corresponds with long-term decisions for a certain place of residence. Persons who already migrated between East and West Berlin make use of the city's other half much more than other persons. This interrelation is not trivial. It shows that 'border crossing' activity spaces are not only a question of quasi natural, 'normal' distance rationality. They are also tied to a certain willingness to be open towards the respective 'new' part of the city (see also below).

Table 2. Average number of activity places by residential mobility between East and West

Location of activity places	Has there been at least one relocation from East to West Berlin (or vice versa)?		
	No	Yes	All
neighbourhood (city's half where interviewee resides)	3,5	2,9	3,4*
neighbourhood (other half)	1,3	1,7	1,4*
macro-spatial (city's half where interviewee resides)	4,1	2,6	3,7*
macro-spatial (other half)	1,2	3,1	1,6*
suburban	0,3	0,1	0,2
total number of activity places	10,3	10,5	10,4
n	218	60	278

* The one-sided Mann-Whitney U test is significant ($\alpha=0,01$). Source: own survey.

Daily spatial patterns as well as residential location decisions strongly correspond with individual attitudes towards the relationship between East and West. Particularly, activities in a wider spatial context are restricted to the respective own half of the city, if an individual expresses resentments against 'the East' / 'the West' (indicators for resentments below table 2). Migrations between the two halves of the city are generally rarely reported, given the rather insignificant (but continually growing) migration flows between the eastern and western part of Berlin (Schulz, 1998).

Table 3. Average number of activity places (without place of work) by attitude towards the city's other half

Location of activity places	attitude			
	no resentments observable	resentments	strong resentments	all
neighbourhood (city's half where interviewee resides)	3,2	3,5	3,4	3,3*
neighbourhood (other half)	1,5	1,2	1,0	1,4
macro-spatial (city's half where interviewee resides)	3,3	3,5	4,2	3,4*
macro-spatial (other half)	1,7	1,2	0,9	1,5*
suburban	0,2	0,3	0,3	0,2
total number of activity places	9,8	9,7	9,9	9,8
n	175	76	27	278

Three variables serve as indicators for resentments:

1. Definition of the own identity as West or East Berliner;

2. explicit quoting of East or West Berlin as the most disliked 'district' of residence after a hypothetical migration;
3. Rejection of the adjacent study area as a potential place of residence with explicitly East-West related reasons. Strong resentments: at least two of the three indicators are true (in figure 3: very strong resentments: all three indicators are true).

* The one-sided Mann-Whitney U test is significant ($\alpha=0,01$). Source: own survey.

Individuals with East-West-related resentments, however, hardly report any East-West or West-East migrations at all (figure 6), while individuals without resentments report on average at least 0.4 former residential districts in the city's other half.

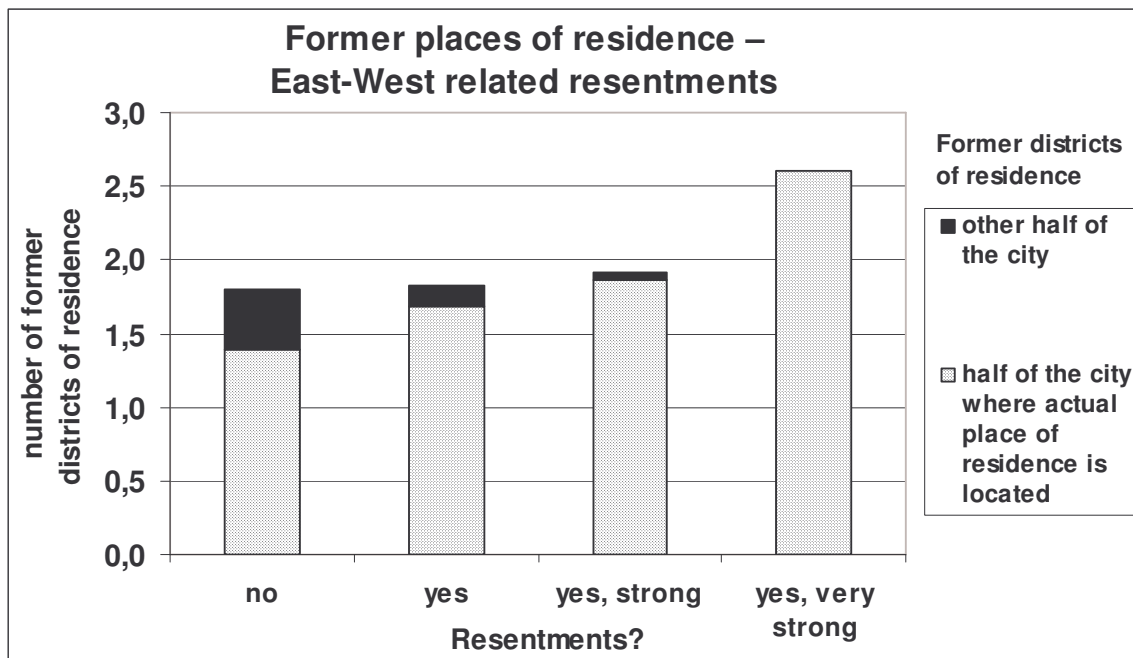


Figure 6. Former districts of residence by attitude towards the city's other half
Source: own survey.

4.3 About 'Border Crossers' and 'Half-Urbanites'

A correlation analysis on the basis of the number of activity places (distinguishing between activity categories and between the two halves of the city) reveals: almost all correlations between activity categories *within* both halves of the city are positive, whereas *between* the halves they are negative. In other words, people limiting themselves to one half of the city with regard to one type of activity tend to do so in other spheres too. This also relates to the other half of the city. For example, people working in what is for them the 'other' half of the city, also tend to spend more of their leisure time there, have personal contacts, visit the doctor or go shopping there.

This suggests the question of how to identify and distinguish groups, for whom the socio-spatial integration of East and West is already far advanced ('border-crossers'), from those groups who tend to concentrate on their 'own' half of the city ('half-urbanites').

In this context, age (respectively, life-cycle position) might play an important role. One may be tempted to assume that the relation between a West Berliner and the eastern part of the city (and vice versa) depends on whether he or she personally knew Berlin before the construction of the wall in August 1961. Having first-hand experience that Berlin was not 'always' divided, might influence his or her kind of adoption of the reunited city.

However, a cross classification reveals that age as such does not have an influence worth mentioning: Neither do older people strongly tend to orientate on the city's other half – regain, in a way, their pre-1961 Berlin; nor is the everyday integration of the city's other half generally far advanced with respect to younger people.

In the following, the question shall be studied, which variables are decisive for the differentiation of the interviewees. For this purpose, groups were constructed by means of a simple technique. The interviewees were divided along two axes into two groups each. One axis represents the measure of the use of the city's respective other half, the other one stands for the spatially projected attitude towards 'the East' or 'the West' ('resentments'). If both axes are dichotomised, we obtain a table with four fields, where every interviewee can be assigned to exactly one field and, therefore, one group (table 4).

Table 4. Groups of different East-West relationship

resentments	use of the city's respective other half	
	weak	strong
resentments	reserved	reserved
detectable	half-urbanites	border-crossers
resentments not	unreserved	unreserved
detectable	half-urbanites	border-crossers

Indicators for resentments: see table 3. Source: own concept.

Considering attitudes as a motivational background for action, the separate analysis of groups, whose motivation differs from action, becomes possible. This makes allowance for the fact that concrete forms of spatial action are not solely – in many cases not even primarily – understandable by way of motives, but subject to restrictions, which more or less dominate action. For instance, the semi-structured interviews with 'unreserved half-urbanites' make clear that their concentration on their own half of the city is a result of 'pragmatic' reasons, e.g. age-related restricted mobility.

The groups' characteristics were examined using two separate methods: firstly, by way of a discriminant analysis, which allowed for an investigation of the relative explanatory value of certain independent variables for the affiliation to a specific group. Secondly, an in-depth examination of semi-structured, thematically focused interviews was undertaken for each group to reconstruct group-specific interpretations of the interviewees concerning different aspects of the East-West relationship.

4.4 Results of a Discriminant Analysis: Long-Term Commitments and Lifestyles

In a discriminant analysis it is asked, whether and how different groups can be described by independent, 'explanatory' characteristics. Variables used in the analysis included position in the course of life, social status, residential mobility, possession of a driving license (as an indicator for everyday possibilities of mobility), and (sub-)cultural features, represented by agreement with some lifestyle oriented items and by TV viewing habits. The items were

chosen on the basis of exploratory factor analyses⁶ as representative for various dimensions of everyday culture. For a description of the variables see table 5. As many of the variables are ordinal or nominally scaled, they are divided into categories and included in the analysis as binary variables.

For the discriminatory power of the chosen features, the forecast membership in a group might be taken as a measure, solely by knowing the independent variables' values without knowledge of real membership.

Table 5. Variables included in the discriminant analysis

Item	description
<i>TV viewing habits</i>	
documentaries and reports	represents factor 'information and general importance of TV'
films with regional background and soap operas	represents factor 'trivial entertainment'
action and horror films	represents factor 'tension'
sports	represents factor 'sports and entertainment'
<i>Lifestyle</i>	
I am very active and adventurous.	represents factor 'active hedonism'
Other people's opinions are important to me.	represents factor 'normative integration'
I feel good in my neighbourhood.	represents factor 'commitment to socio-spatial environment'
I greatly value a feeling of security.	represents factor 'security'
I greatly value time for personal affairs.	represents factor 'individualism'
Position in the course of life	combination of age and household structure (less than 40 years, 40 - 59 years, 60 years or older; with or without children in the household). 6 binary variables
Social status	additive scale including vocational position (from unemployed to full-time employees; and from worker to self-employed), education (from persons without school degree to university degree), and category of income per household member. The scale is transformed into 4 binary variables
<i>Residential mobility</i>	
Duration of residence in Berlin	since before 1990 (yes or no)
Moved house from East to West (or vice versa)?	yes or no
Car in the household	yes or no

Source: own survey.

A parallel inclusion of the named features into the discriminant analysis leads to a correct classification, i.e. a 'hit probability' of 59.5 per cent of all cases. A random classification would instead distribute the probabilities evenly, i.e. 25 per cent for each of the four groups. The increased probability of more than twice that much proves that the affiliation to a specific group can be partially explained by certain pre-dispositions. On the other hand, the fact that the probability is not higher than 59.5 per cent indicates that spatial action and attitudes have a certain autonomy and independence from pre-formation. Thus, group affiliation may to a significant extent also be determined by the actors' ability for self-regulation.

⁶ Extraction method: principal components; rotation method: varimax; total variance explained: 66% (factors of TV habits), 53% (lifestyle factors).

The relative importance of the included variables is measured by their average discriminant coefficient (see below table 6). According to this, the most prominent feature to describe the affiliation to any particular of the four groups is whether or not somebody has already moved house between East and West (table 6). The second important feature is the factor 'active hedonism', followed by the period of residence in Berlin, the position in the course of life, the factors 'information', 'security', 'commitment to socio-spatial environment', 'trivial entertainment', 'individualism', 'tension', 'normative integration', the social status, and the factor 'sports and entertainment'.

Although the included variables are partly correlated to each other, the order of the coefficients allows for conclusions on which variables prevail over others. There are two points to be stressed, based on the results of this analysis:

the importance of residential mobility, not only with respect to migrations between East and West, but also to the duration of residence in Berlin: For persons who migrated to Berlin after 1989, the distinction between East and West Berlin plays a subordinate role, if any.

the importance of lifestyle-oriented dimensions that become evident in self-interpretations of the interviewees and in TV preferences. In the latter, cultural schemata are being reflected that might be interpreted in a wider sense. The comparatively strong prognostic power of lifestyle orientations provides evidence for the liberation of individuals from traditional biographical patterns and the emergence of new patterns of activity and travel behaviour.

Table 6. Average discriminant coefficient of the variables

Variable	coef- ficient*	Variable	coef- ficient*
Moved house from East to West (or vice versa)?	0,33	Tension (middle 3 rd)	0,13
Active hedonism (middle 3 rd)	0,28	Position in the life course (high age, no children)	0,13
Duration of residence in Berlin	0,23	Position in the life course (young age, no children)	0,12
Position in the life course (young age, children)	0,20	Security (middle 3 rd)	0,12
Information and general importance of TV (middle 3 rd)	0,18	Trivial entertainment (middle 3 rd)	0,12
Active hedonism (upper 3 rd)	0,15	Normative integration (middle 3 rd)	0,11
Security (lower 3 rd)	0,15	Active hedonism (lower 3 rd)	0,11
Commitment to socio-spatial environment (middle 3 rd)	0,15	Social status (1 st - lowest - quarter)	0,10
Trivial entertainment (lower 3 rd)	0,15	Normative integration (upper 3 rd)	0,10
Individualism (lower 3 rd)	0,14	Commitment to socio-spatial environment (lower 3 rd)	0,10
Position in the life course (medium age, no children)	0,14	Sports and entertainment (upper 3 rd)	0,10

The table shows the average discriminant coefficients (sum of the discriminant coefficients of all discriminant functions, weighted by the eigenvalue share of the functions). The variables that appear more than once in the results are binary variables constructed from ordinal and nominal variables. Variables with coefficients < 0,10 are not shown here for lack of space.

Eigenvalues: 1st function $\gamma=0,35$, 2nd function $\gamma=0,25$, 3rd function $\gamma=0,16$.

Source: own survey.

5. Results of Semi-structured Interviews: Group-specific Patterns of Interpretation

The lifestyle-oriented explanation patterns discussed above are in fact individual self-interpretations, which are being mirrored in certain items. What follows is a brief description and analysis of such group-specific patterns of interpretation for two selected groups ('reserved half-urbanites', 'unreserved border-crossers'), by concentrating on certain thematic fields and related key questions specified in section 3.

5.1 "We feel the difference quite drastically" – Interpretations of 'Reserved Half-Urbanites'

Of the total number of 58 semi-structured interviews, 21 were held with persons from this group. In the demographic structure of the interviewees, the long average period of residence in Berlin is obvious. Except one person, all interviewees live in Berlin since 1989 or longer, some 40 per cent are born there. A certain bias is caused by the high number of persons in early retirement. These statistics indicate, what was confirmed by the interviews: Many persons in this group lost their job after the *Wende*; their age preventing them from being outright unemployed.

Nevertheless, personal advantages and disadvantages resulting from unification are on the whole evenly weighed (table 7). Loss of jobs and career interruptions or changes are quoted as existential losses mainly in the East. In extreme cases, social decline can lead to a desire for the wall to be re-erected. Among the Westerners, existential threats only exist in a few cases. Generally, minor financial disadvantages are connected to the *Wende*, such as the abolition of the *Berlin-Zulage* (an extra percentage of wage paid to employees in West Berlin before 1989, as compared to their West German counterparts), the *Solidaritätszuschlag* (an additional tax being levied after 1989 to build up the East), or disadvantageous collective wage agreements.

Table 7. Group-specific patterns of interpretation of the East-West relationship

aspect	reserved half-urbanites	unreserved border-crossers
experiencing the fall of the wall	hesitating, 'wait and see' (50 per cent)	spontaneous-euphoric
Personal dis-/advantages from reunification	disadvantages and advantages in balance + freedom of movement (travel, transit through GDR) + consumption, shopping – neighbourhood: security (E), quiet, traffic, fluctuation – vocational: E: job, career; W: minor financial disadvantages	advantages dominating disadvantages not decisive <u>but</u> : often seen only to affect other persons <u>details</u> : see other group + political freedom (E), + vocational: job, career, studying (E)
Perception of people in the other half of the city	negative E-W-differences strong and lasting (mentality, socialisation, lifestyle: 'us' -- 'them') stereotypes E about W: arrogance, materialism, elbow society, patronizing W about E: suppliant, backwardness, support for socialist system	positive to 'normal' judgement based on own individual experiences stereotypes 'in balance'
Social contacts in the other half of the city	E: yes (superficial) W: no break-down after 1990	yes (often intensive) conflicts are settled down without E-W-reinterpretation
Activities in the other half of the city	avoidance or selective use	active adoption

+ positive judgement
– negative judgement
E East
W West

source: own survey. n=42

Mainly in the eastern areas, security motives play a major role in the individual's judgement on the effects of unification. Social security as well as security from criminality are elements still associated predominantly with the GDR. In retrospect, the GDR thus appears as a society of neighbourly solidarity and fellowship, as opposed to today's 'elbow society' (a German slang expression for a society that is characterised by aggressive competition). However, it is by no means only in the East where people emphasise that living in conditions as before 1989 would be equally as good or even better than the present situation.

Existential dread (East) and mostly smaller pecuniary losses (West) are counterbalanced by the predominant advantage of reunification, i.e. gaining freedom of movement. In the East, this is due to the possibility to travel, in the West more to the abolition of the harassing bureaucracy at the frontier checkpoints, but also to the regained availability of parks in neighbouring districts beyond the former wall.

In the descriptions of experiencing the fall of the wall, a cautious attitude is clearly predominant in this group. Only half of the interviewees portray the fall of the wall with positive feelings (in other groups, this is by far the majority). The other half recall these events with mixed or without recognisable emotions, or even in negative terms. In most cases, the spontaneous euphoria in the face of the overwhelming events, which dominated in

the other groups, was accompanied by serious doubts, or it did not effect the interviewees at all. In numerous cases, the first visit in the newly opened half of the city was undertaken only after quite some time.

The trace leading from the first hesitation before entering the newly opened part of the city to its more recent sub-average use, appears to be standard progression in dealing with the unification of Berlin: People who avoid entering the other half of the city today, (often) already tended to do so in the days of the fall of the wall. The experience of this period turns out to be a biographical mosaic piece, pre-shaping the path to a more or less strong spatial integration of the city in the following years.

(Interview 2061, female, 63 years, Treptow): At once, when I heard about it, at night... my son had called up and said "they are all going over there"... I thought, this is gorgeous, but who knows what will happen now. I had my misgivings, not the euphoria of my children.

In the perception of people in the city's other half, negative aspects prevail. From the eastern point of view, such references include western arrogance, materialism, consumption orientation and 'elbow-mentality'. The experience of rejection from West Germans leads to an attitude of defence, corresponding to the feeling of a western 'lifestyle colonisation'. 'Western' traits of character and ways of life are adopted by many East Germans ('by us') but cause objection and irritation among those with strong bonds with their origin. Comparing East and West, it becomes apparent that the willingness to argue is stronger in the East, whereas indifference is stronger in the West.

In spite of some highly differentiated judgements, widespread prejudice and stereotypes are typical for this group. Altogether, there is a high degree of consent that there are (and will be for a long time) clear differences between East and West Germans.

Actual contacts between West and East exist mainly on the part of East Berliners. However, it is frequently mentioned that acquaintances from the pre-1989 period had swiftly broken down after 1989, and new relationships lasted only for a short time. West Berliners rarely have any contact in the East; but if they do, it seems to be superficial.

Altogether, a distinct 'inner wall' can be stated for this group, expressed in the widely negative judgement on people in the respective other half of the city. Partially, these value judgements are caused by experiences after the fall of the wall, but stereotyped prejudices frequently occur as well, of which the interviewees are sometimes aware of. Key experiences are occupational and other economic difficulties, the breaking-off of friendships and acquaintances, and negative impressions in the city's respective other half, in the East largely linked to disappointment.

Statements on activities in the city's other half indicate that the 'wall in the heads' is not only statistically, but also in the actors' self-consciousness, linked to a 'wall in the feet'; either by avoiding to enter the city's other half as far as possible, or by using it only selectively, for instance if there is not enough time to go to the 'own' shopping centre.

(Interview 2073, female, 59 years, Treptow): The mentality is completely different, we grew up in a different way. Over there, it is a throw-away-society, and this is not the way we grew up. [pause] Thus, the mentality is – our generation certainly does not grow together. Maybe – my children, maybe, or grandchildren, sure, but not we. We feel the difference quite drastically. [pause]

Interviewer: And do you still have any relationships now, or occasions, in the former western part...

Woman: Now and then, when I go shopping, okay, let's say, shopping – no, usually I go to the Alex [Alexanderplatz, centre of East Berlin]. But if I want to go for a stroll, and I don't have that much time [sic!], then, okay, I go over there.

5.2 "We never had any problems with that" – Interpretations of 'Unreserved Border-Crossers'

In this group, 21 interviews were held. A high number of pupils, students and apprentices is a characteristic feature of this group. However, an average share of retired persons is represented as well. Ten of the interviewees were born in Berlin; four persons migrated to Berlin after 1989, three more during 1988 and 1989. Thus, in terms of residential mobility, the group differs remarkably from the one described before. 6 out of 21 persons are West Germans living in East Berlin, or vice versa.

Out of the remaining 15 persons in the group, there are only four from the West. Thus, the following statements are primarily focused on persons from East Berlin.

A comparison of the personal situation before and after the fall of the wall shows that the *Wende* is predominantly judged positively. The main relevant aspects quoted by East Berliners are: freedom of movement, travelling, possibilities of consumption, contact to relatives; but also: political freedom, educational and employment possibilities, and the reconstruction of infrastructure and housing after reunification. In the West, only the abolition of difficulties related to transit journeys through the GDR is explicitly quoted.

Existential problems are quoted as disadvantages in this group, too: unemployment, existential dread, loss of social security, loss of contact to neighbours and former colleagues. However, in contrast to the 'reserved half-urbanites', disadvantages are never crucial for the personal overall balance of the *Wende*, not even the loss of jobs. Another decisive difference characterising 'border-crossers' if compared to 'reserved half-urbanites' is that social disadvantages – while recognised – are often seen to affect other persons, rarely one's own situation.

Most of the interviewees took part in the events related to the fall of the wall spontaneously and without hesitation. The descriptions given are often euphoric and convey the overwhelming spirit and atmosphere, intensively mixing joy and excitement.

(Interview 2181, female, 48 years, and her husband, Treptow): I packed up work at 10 a.m., and we quickly changed clothes, got some flowers, and then we really went to the Friedrichstraße.

Husband: That was the only border crossing station.

Woman: Yes, yes, that was the only border crossing, and then [emphatically], I passed it for the first time!! [cries] (...) that was, you can hardly imagine that (...) and then I thought: my God! How beautiful you may witness this.

Experiences with people in the city's other half are narrated in a positive to neutral way, concerning first impressions in the *Wende* period. For the years thereafter, the experiences diverge. In some cases, contact stays normal or explicitly positive. People are aware of the

fact, that this is by no means a matter of course, but avoid judgement on the basis of experiences of others.

(Interview 3161, male, 75 years, Pankow): And, concerning the emotional – our friendship with our, with those living in West Berlin, this is after all – we never had any problems with that. The topic Ossi – Wessi [pejorative for East/West German] is not on the agenda, and we don't have any problems to get in touch.

However, in other cases, clear West-East differences or conflicts can be identified. In these cases, differentiated judgements prevail, in which either positive and negative stereotypes of the 'outgroup' are in balance, or judgement is passed on individuals without detectable stereotypes. In contrast to the predominant tendency of 'reserved half-urbanites', narrations of conflict situations perceived as East-West-related indicate a different way of dealing with problems: The consequence of conflicts is not to break-off contact, but instead, to treat problems sensitively and to openly settle existing conflicts. This is mostly based on intensive contact in the other half of the city.

Action patterns in this group may in fact be referred to as 'border-crossings'. An active adoption of the new urban space took place mainly in the first years after 1989; at times motivated by sheer curiosity. Altogether, this group contains the 'pioneers' of socio-spatial integration. For some of the interviewees, East-West contact and 'border crossing' activities are a normal everyday matter, which happens without being of major importance. For others – probably the majority – the socio-spatial process of growing together is not a matter of course, but is pushed ahead by carefully directed, intensive dealing with it and an open handling of conflicts.

6. Conclusions

6.1 Empirical results

The key hypothesis for the above empirical studies held that if people avoid integrating the city's respective other half into their everyday life, then this would indicate the existence of an 'inner wall' between East and West. This was examined on the basis of destination choice.

First, considerable influences of long-term bonds were found. These were investigated by distinguishing groups of different spatial origin and duration of residence in Berlin. Particularly with respect to trustful social relationships, such as between doctor and patient, East-West stereotypes still seem to play a major role for destination choice. Destination choice is not merely an outcome of structural conditions, but also of purposeful, intentional action.

Secondly, subjective patterns of interpretation play a major role for destination choice. These are being expressed in lifestyle orientations and in biographical experiences, perceptions and attitudes towards the unification and the city's other half.

Group-specific patterns of interpretation indicate that there are considerable differences between the distinguished groups ('reserved half-urbanites', 'unreserved border-crossers'), whereas within the groups there are identifiable, typical value judgements on East-West relations and the respective 'outgroup'. This pattern is reflected in differences in destination

choice. On the one hand, groups can be identified, for whom the socio-spatial integration of East and West is already more or less a reality. On the other hand, there are groups who avoid integrating the city's other half into their own daily life.

The analysis provides evidence that self-interpretations ('identity') and interpretations of the outside world (like 'the East/West', 'unification') may contribute considerably to a better understanding of spatial orientations. According to a discriminant analysis, this may be complemented by biographical patterns and long-term effects of spatial origin and choice of housing location, and lifestyle orientations. The explanatory power of these factors seems to outweigh socio-demographic variables.

Social experiences with/in the other half of the city (or country) during the process of unification - i.e. the individual biography - play a decisive role for activity spaces. Strategies of coping with the experiences are being developed, which often aim at confirming the experiences and stabilising judgements.

6.2 What is left to do? – Consequences for research

Beyond doubt, the process of unifying Berlin is a very specific example for travel behaviour that can hardly be generalised. However, some more recent studies conducted in various spatial contexts and with various population groups also provide evidence for the relevance of long-term bonds with former places of residence and places of work (Geier et al., 2001; Simonsohn, 2003; Scheiner, 2004, 2005a, 2005b). There are consequences for research on a number of different levels. Concluding the article, they are briefly outlined.

In spite of the methodical effort, *long-term causes for travel behaviour* should be investigated more intensely. Little is known about the relationship between residential mobility and travel behaviour, and about the role of other biographical spatial experiences (e.g., ties to the type of spatial environment where an individual grew up, role of childhood socialisation for interaction and mode choice, see Scholl, 2002).

Interpreting actions, one has to assume that 'determinants' only become relevant mediated by *subjective interpretation*. Consequently, these interpretations have to be considered by the researcher. For instance, the age of a person is not a determinant for his behaviour, but a basis of his age-interpretation: Action is guided by the individual's evaluation of his own capabilities, as psychologists have pointed out with respect to a person's perceived behavioral control (Bamberg, 1996; Bamberg et al., 2003). As a consequence, action-theoretical approaches should be further developed in travel research. Some sociological approaches might work as a guideline (Schütz and Luckmann, 1974; Giddens, 1984). The less is known about the guiding research topic, the more these approaches require *qualitative-hermeneutic methods* complementing the traditional standardised travel surveys (Roe, 2000).

Particularly for the study of questions concerning unknown territory, *empirical methods* should be preferred to simulation. For instance, the effect of urban design measures or transport infrastructure measures on travel behaviour can hardly be investigated by simulation models (although this is frequently done). The reason lies in the fact that both the spatial distribution of land-use (supply structure) and the 'space resistance' as an effect of transport infrastructure are input parameters for the model. Thus, changes in transport demand as an effect of the parameter variation only confirm the influence of variables that are already preconditioned as influence factors. In such a circular reasoning, the real-world effect of the factors as well as other factors necessarily remain unclear. In contrast, empirical research provides a chance - on the basis of theoretical considerations, exploratory studies,

maybe unexplained variance of the studied parameters etc. - to detect new connections. Therein then lies the chance for innovation.

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