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Understanding the social development of a post-socialist large housing estate: The case of Leipzig-Grünau in eastern Germany in long-term perspective

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Abstract

For decades, public and scholarly debates on large, post-war housing estates in western Europe have been concerned with social decline. After 1989/1990, the point in time of fundamental societal change in eastern Europe, this concern was transferred to estates in post-socialist cities. However, empirical evidence for a general negative trend has not emerged. Recent publications confirm the persistence of social mix and highlight the differentiated trajectories of estates. This paper aims to contribute to an approach of how to conceptually make sense of these differentiated trajectories. Using data from a unique longitudinal survey in East Germany, starting in 1979, we investigate the state of social mix, drivers of social change and the inner differentiation in the housing estate Leipzig-Grünau. We found no proof for a dramatic social decline, rather there is evidence for a slow and multi-faceted change in the social and demographic structure of the residents contributing to a gradual social fragmentation of the estate. This is a result of path dependencies, strategic planning effects and ownership structures. We discuss these drivers of large housing estate trajectories and their related impacts by adapting a framework of multiple, overlapping institutional, social and urban post-socialist transformations. We suggest embedding the framework in a wider and a local context in which transformations need to be seen. In conclusion, we argue for a theoretical debate that makes sense of contextual differences within such transformations.

Keywords

Context, large housing estates, Leipzig-Grünau, multiple transformations, neighbourhood change, post-socialist transition, social mix

Introduction

Large housing estates are one of the most fascinating features of the urban landscape in Europe. The fascination stems from the tension between their

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uniform appearance and the heterogeneity of neighbourhood pathways and social processes behind these seemingly homogeneous facades. For a long time, the detection and explanation of common developmental pathways of these estates have been in the foreground of academic debate, especially among western European academics. The experience of more or less rapid social decline has been the motivation for works aimed at uncovering drivers of neighbourhood decline. In recent years, the development of large housing estates in the former state-socialist countries has broadened the perspective. Following the political changes around 1990, these estates took very different pathways, ranging from decline to upswing, from ageing of districts to studentification of districts, from being popular to being stigmatized.

This experience coincides with a growing interest in the differentiation of urban experiences and development pathways, rather than detecting homogeneous, universal patterns. The prominence of catchwords such as "ordinary cities" or debates around the "geographies of theory" show a growing concern for adequate reasoning about heterogeneous urban experiences. The volume *"Residential Segregation in Comparative Perspective. Making Sense of Contextual Diversity"* (Maloutas and Fujita, 2012) is a recent contribution to the segregation literature that highlights different processes of residential segregation stemming from differences in contextual factors, such as the economic sphere, the social and cultural sphere, the specific social-spatial formations of cities and the specific organization of the welfare state.

We aim to expand the debate on the explanation of different urban pathways and direct this interest at research field on post-socialist housing estates. To do so, we use a unique data set to investigate the social development of a specific estate in eastern Germany, Leipzig-Grünau, in long-term perspective. We confine our interest to the question of how the pathway of a large housing estate in the post-socialist realm can be explained. To do this, we adopt the suggestion of Sýkora and Bouzarovski (2011) to conceptualize the post-socialist transition as multiple, overlapping, institutional, social and urban transformations. We apply their framework to the East German case and refine it in the course of this application. From here, we discuss which drivers were important in the development of this estate and, finally, relate them to the debate on large housing estates in western and eastern Europe.

Research on large housing estates in Europe

"Urban Sores": large housing estates in the western scholarly debate

In western Europe, large housing estates were constructed in the decades after WWII to combat housing shortages due, in great part, to massive war damage. At the same time, these decades were characterized by an increasing role of the state in housing development, as well as by an upswing of modernist architecture and mass housing concepts (see Turkington et al., 2004). The western European debate on neighbourhood development has generated a vast body of literature on the developmental pathways of large post-war housing estates. Much of this research simultaneously addresses neighbourhood decline, concentrations of social problems and exclusion of marginalized social groups (Power, 1997; Power and Tunstall, 1995; Prak and Priemus, 1986; Spicker, 1987); for an overview, see Van Beckhoven et al., 2009). The title of Skifter-Andersen's (2003) monograph, *"Urban Sores"*, symbolizes this debate.

One of the early explanations for such decline, which received broad scholarly attention, is the *role of the physical design* of estates. Not only since the acceptance of Newman's concept of "defensible space" (Newman, 1972) has the tradition of modernist architectural ideas been criticized for exerting negative effects on the social life of the inhabitants of such estates. Newman considers the design of public housing estates in the USA as the causal factor responsible for increasing social deprivation, decay and criminality. This position is also represented by works such as *"Utopia on Trial"* (Coleman, 1985), in which the modernist design of estates has been blamed for the concentration of social problems. In rejecting this argument, some authors, for example Spicker (1987), maintain that increasing poverty in society in general is the driving force for further spatial concentrations of poverty and deprivation in housing estates.

Another group of drivers of decline is related to *residential mobility and housing market forces*. With the permanent construction of new housing developments, choices increase and affluent households leave the estates. Less affluent households are "trapped" (Musterd and Van Kempen, 2007), due to their economic constraints. Such arguments are not only characteristic of the US debate, but also of some western European approaches (see reviews by Skifter-Andersen, 2003; Van Beckhoven et al., 2009). Other investigators have developed relatively complex models of neighbourhood decline that encompass not only design and mobility, but also aspects such the *technical state* and potential *physical decline* or *economic stress* for landlords and housing companies (Prak and Priemus, 1986; Skifter-Andersen, 2003). Power (1997) emphasizes the interaction between social problems and physical decay, but not in the deterministic manner of Newman or Coleman. She argues, instead, that the *management of estates* is decisive, both in explaining the decline of estates and in developing policies to combat decline. External contextual factors, such as the effects of the global economy or national policies, have been integrated into some considerations, especially in the model of Prak and Priemus (1986). Dean and Hastings (2000), finally, demonstrate that casting aside a *negative image* is almost impossible, even with extensive regeneration efforts (see also Wassenberg, 2004).

In summary, the debate has been centred on the US and western European experiences, with housing estates typically being public or council housing, and encompassing highly differentiated and segregated urban societies. Theoretical work has a pre-set focus on explaining the decline of post-war housing estates, rather than stability or positive change. Thus, less is known about factors contributing to the stability of housing estates. The monograph, *"Mass Housing in Europe"*, (Rowlands et al., 2009) marks a shift here. It provides evidence for a variety of trajectories in large housing estates within Europe; that is, in southern Europe, estates are often well accepted, and display a high quality of the housing stock, as well as good amenities and surroundings (Dekker et al., 2011). Therefore, the myth of a common destiny of post-war housing estates in the West is being challenged by empirical results, especially from contexts where owner-occupancy dominates in *ownership structures*, and where large housing estates play a prominent role in urban structures. The one factor contributing to stability and recently highlighted in the literature is high *housing satisfaction*, especially of the elderly (Dekker et al., 2011; Filius and Van Kempen, 2005), an issue that has been largely overlooked in the literature on decline.

"Still popular": large housing estates in the eastern European debate

In the former socialist countries, besides solving housing shortages, the construction of large housing estates also followed clear political goals: providing egalitarian housing for the masses with good public services, as well as with publicly accessible green spaces and recreational zones. In this fashion, a counterpoint was set to the historical urban housing stock, with its sub-standard housing conditions, which was either demolished and rebuilt, or left to decay (Hegedüs and Tosics, 1998; Kovács and Herfert, 2012; Rietdorf, 1976). As a consequence, large housing estates today provide nearly 50% of the entire housing stock; often even more in former industrial cities. Altogether, in the post-socialist cities of Europe and the former USSR, approximately 170 million people live in such estates (Knorr-Siedow and Kosiol, 1998: 7).

Since 1989/1990, studies have continued to ask whether the experiences of western Europe are a blueprint for the future of large housing estates in eastern Europe (e.g., Knorr-Siedow and Kosiol, 1998; Szelényi, 1996; Van Kempen et al., 2005). Concerns about a concentration of poverty, criminality and decay were extended to include the post-socialist estates, with formulations such as "slums of the 21st century" (Szelényi, 1996: 315), or "the 'time bomb' of urban development" (Enyedi, 1998: 33). These concerns were – and still are – based on the similarities in the *homogeneous design and construction*. These are interpreted as a sign of their undesirability, leading to the hypothesis that *mobility* will be crucial: more affluent households will flee such housing environments as soon as choices increase. This argument was especially favoured by scholars with a western background (Hall et al., 2005: 341; Sailer-Fliege, 1999; Tsenkova, 2000; Wassenberg, 2004).

The work of eastern European scholars in the 1990s was also concerned with the decline of estates, but with more emphasis on problems related to *ownership* and *lack of maintenance*. Former state-owned property was privatized to the sitting tenants for prices far below market value. Over time, and with the gradual introduction of housing market mechanisms, the burdens of this privatization emerged: new home-owners were often unable to afford the renovation or maintenance of their flats and refurbishing entire blocks became more difficult (e.g., Clapham et al., 1996); this is also documented in the "Sofia declaration on the future of the large prefabricated housing estates in central and eastern Europe" (Knorr-Siedow and Kosiol, 1998: 7). The in-depth studies of Nova Huta (Poland) and Petržalka (Slovakia) by Stenning et al. (2010) ask about the impact of the neo-liberal paradigm in urban development that has spread into the transition countries. The authors show how, on the micro level, residents and local actors translate marketization into their daily practices and decisions.

Empirical work, however, continues to identify post-socialist housing estates as places of social mixing and highlights differences in the trajectories of estates within the cities (e.g., Demzky von der Hagen (2006) for Budapest, Kabisch and Grossmann (2013) for Leipzig, Szafrańska (2011) and Marcińczak (2012) for Łodz, Temelová et al. (2011) for Prague, Brade et al. (2011) for St. Petersburg). Most of these studies are based on case study research, and deal with residential mobility or housing preferences as a potential danger for social mixing. For Prague, a recent survey asked for perceptions of ideal housing and found that large housing estates are indeed considered as ideal housing by a significant proportion of people (Sunega et al., 2014). Based on qualitative work, Grossmann and Haase (2011) show that the typically dense infrastructure of housing estates and a fringe location are attractive for a range of households. The study by Kovács and Herfert (2012) is a rare comparative contribution. It presents various trajectories of estates, ranging from social stability, even of high social status, to losses of social mix. The ongoing housing shortage is highlighted as one reason for the observed stability. It makes large housing estates (still) attractive for middle-class families and especially for young households, for example in Riga (Treija, 2009) or St. Petersburg (Brade et al., 2011). A second reason for stability is that eastern urban societies, as such, are less segregated than in western Europe; extreme polarization has not developed (Kovács and Herfert, 2012). Marcińczak (2012) concluded that, in Lodz, the socio-spatial mix is maintained by the migration of higher status groups from prefabricated housing estates located in the core city to nearby suburban areas, where lower status groups had been overrepresented. If housing shortages and a relatively non-segregated urban society hinder the out-migration of higher status groups and a loss in status, then cases with different framing conditions should be the most interesting to test the decline hypothesis.

East German housing estates in the German debate

In Germany, approximately 2.3 million flats are located in large housing estates with between 2500 and up to even 35,000 flats (Liebmann, 2004: 18). Whereas, in West Germany, only 5% of the existing housing stock consists of large housing estates, these dense residential areas with multi-storey blocks represent 16% of the stock in East Germany (Liebmann, 2004: 46).

In contrast to developments in eastern Europe, the housing market in East Germany is characterized by a supply surplus, rather than shortage. Housing vacancies reached up to 1 million flats (13% of the total housing stock) at the turn of the century (Bundesministerium für Verkehr Bau und Wohnungswesen (BMVBW), 2000). Although vacant housing affected the entire housing stock, it was particularly intense in large housing estates because, here, extensive out-migration had occurred in comparatively small areas over a very short time period. This seemed to confirm that many former residents disliked this kind of housing. The estates were stigmatized as the dinosaurs of the socialist

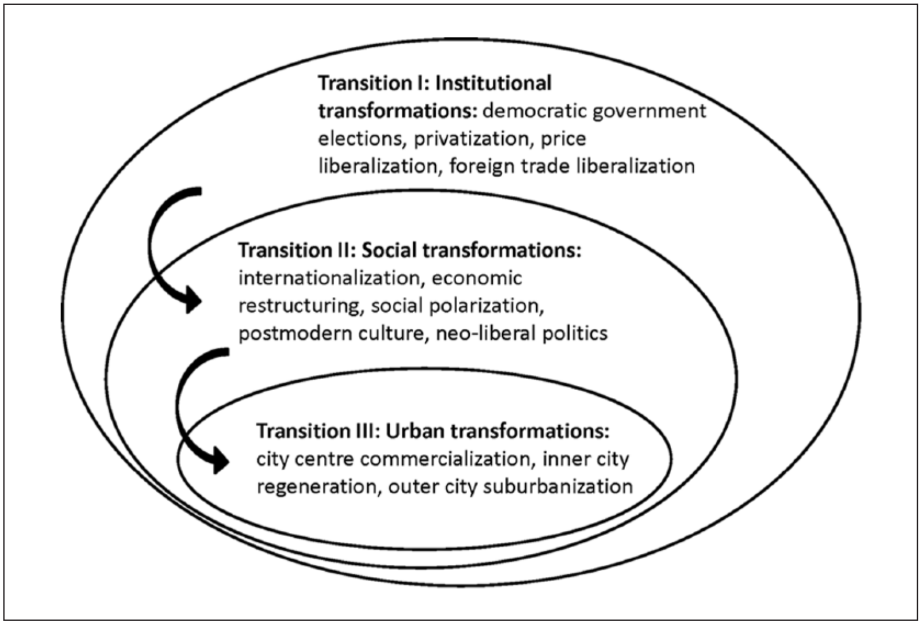

Figure 1. Multiple transformation in post-socialist cites as developed by Sýkora and Bouzarovski (2011).

past, with headlines like "Only dynamite will help here" in the *Der Spiegel* (documented by *Grossmann 2005*). Thus, the East German estates seem to follow in the footsteps of many large housing estates in western Europe in terms of decay and social decline, and lack of appreciation by the residents.

However, the available literature shows that expectations of a rapid social decline were exaggerated; instead, estates followed a variety of pathways. Estates that were built to house workers on industrial sites that were closed, due to massive de-industrialization, did, in fact, experience social decline, indicated by high unemployment rates in the remaining population (Keller, 2005; Knorr-Siedow and Droste, 2003; Liebmann, 2004; Peter, 2010). In other estates, social mix was and still is maintained, despite out-migration, for example in eastern Berlin (Kompetenzzentrum Großsiedlungen, 2011; Musterd, 2008).

Thus, when investigating the social development of a specific large housing estate, the quest for explanations has to go beyond housing mobility and choice. Instead, estate development has to be interpreted in the light of the (specific) post-socialist transition, which, as we show next, itself consists of intertwined, multiple transformations (Sýkora and Bouzarovski, 2011).

Understanding estate development in light of post-socialist urban development

After a quarter of a decade, theorizing on post-socialist urban development sees some contributions that no longer ask whether or not these cities are "catching up" with their western European counterparts, but emphasize the specifics of how former socialist cities develop (Baldwin et al., 2012; Gentile and Marcińczak, 2014; Radzimski, 2014; Smith and Rochovská, 2007). For this paper, we especially draw on the work of Sýkora and Bouzarovski (2011), who suggest conceptualizing what they term "post-communist urban transition" as ongoing, coinciding and overlapping multiple transformations (Figure 1).

They distinguish three dimensions of transformations: the *institutional transformations* of the early years of transition, the transformations of social practices, norms, and values in a medium-term perspective and the long-term transformation of the urban morphology, including residential segregation. Institutional transformations occur relatively soon after the change of political systems and encompass the change of governmental, housing market and other economic institutions. *Social transformations* occur in the medium term and are influenced by the institutional transformations. The change in the social composition of an urban society, changing values and orientations, and also changing practices and the organization of the social sphere, belong to this dimension. The long-term results form a third dimension of transition, the *urban transformation*. This would then encompass the long-term changes in the urban landscapes, such as inner city commercialization and redevelopment, suburbanization and the like (Sýkora and Bouzarovski, 2011).

However, is this enough to explain the outcomes of transitions at the local level? The post-socialist world is rather heterogeneous. National differences are important but also regional development has an impact, for example in relation to economic trajectories and employment possibilities. The local setting with the composition of neighbourhoods, local planning strategies, the agency of actors, etc., adds to the specifics of the context a large housing estate is situated in. Therefore, in this paper we are extending the current field of research by considering the interplay of the dimensions of transition with the local and wider contexts. Providing rather unique data from a long-term monitoring of small-scale social changes, we argue that research on neighbourhood trajectories needs to emphasize the interplay of political and institutional change, local factors and shifts in the wider contexts. This is even more important for large housing estates because their similar appearance seems to seduce researchers to assume a common destiny of estates.

Using data from a longitudinal survey in East Germany, we investigate local (and changing) patterns of spatial socio-demographic structure in the large housing estate of Leipzig-Grünau before and after 1989. Having both – the eastern and western debate – in mind, we address three research questions:

- How have socio-demographic characteristics of the estate's population changed spatially and over time?
- To what extent did social status change or is the estate "still popular"?
- What are the drivers of a long-term social change or a remaining stability?

On a more general level, we ask how we can conceptualize these drivers of large housing estate trajectories using the three suggested dimensions of transformations of post-socialist urban space.

Contextualization of the case study area Leipzig-Grünau with respect to multiple transformations

The city of Leipzig encompasses approximately 521,000 inhabitants (City of Leipzig, 2013). Directly after the fall of the Berlin wall, until December 1990, approximately 30,000 inhabitants left the city and moved to West Germany. Ten years later, total population losses amounted to roughly 100,000 inhabitants (approximately 20% of the population, Table 1). Therewith, the city has become a prominent example of shrinking cities, and has been charaterised as the national "capital of housing oversupply" (Rink et al., 2012).

In terms of *institutional transformations*, Germany is certainly an exception in the post-socialist realm. With the reunification on 3 October 1990, all former institutions were dissolved and rebuilt according to the West German welfare state model, based on a market economy. Rapid de-industrialization between 1990 and 1993 was the consequence, leading to massive unemployment. On the housing market, the former state-owned housing company was transferred to the municipal level, and parts of the older housing stock were restituted to former owners. In 1995, the housing market was liberalized; a housing and land market was re-established through a step-wise transfer of West German regulations to East Germany. At the same time, tax deductions were introduced to attract investment and capital to East Germany. This led to a relativelyrapid redevelopment of inner city areas, compared to other eastern European cities (Rink et al., 2012).

With respect to *social transformations*, as well as the resulting *urban transformations*, a "demographic revolution" occurred: the birth rate fell suddenly to a

Table 1. Population number in Grünau and in the city of Leipzig, sample size and return rates of questionnaire surveys in Leipzig-Grünau.

	Sample size *N*	Return %	Inhabitants Grünau	Inhabitants Leipzig
1979	310	94	16,000	563,225
1981	578	92	36,000	559,574
1983	346	92	60,000	558,994
1987	330	88	85,000	549,230
1992	415	85	78,000	496,647
1995	466	82	74,000	471,409
2000	560	83	61,000	493,408
2004	672	79	49,400	498,491
2009	710	80	44,500	518,863
2012	–	–	40,397	520,838

historically low level of 0.87 children per woman, a feature of transition that eastern Germany shares with a number of post-socialist countries (Haase et al., 2011). Together with out-migration, the city of Leipzig – like many other East German cities – saw a rapid population decline throughout the 1990s, caused both by job-related out-migration and suburbanization. Housing choice increased with the refurbishment of the inner city and suburbanization. Concomitantly, neighbourhood images changed, resulting in a stigmatization of large housing estates and a new esteem for inner city, historical housing structures. Numerous and diverse districts, however, experienced considerable public and private investment through funding programmes for the regeneration of housing stock, construction of single family homes and infrastructure development.

From the 2000s onwards, and not least due to such investments, Leipzig has been growing considerably; the city became the most prominent example of reurbanization in eastern Germany (Heinig and Herfert, 2012; Kabisch et al., 2010).

The large housing estate of Leipzig-Grünau

The housing estate of Leipzig-Grünau was built between 1976 and 1989. With about 38,000 flats, it is the third largest estate in the former German Democratic Republic (GDR). Leipzig-Grünau is divided into eight housing complexes (HCs), pragmatically named in the sequence of their construction (HCs 1–8; see Figure 5).

The eight complexes differ in design. Whereas the oldest HCs (1–3) comprise low-rise buildings, mainly of five stories, and have a comparatively low population density, the more recently built HCs (4–8) comprise higher buildings and have a much higher density.

The estate is well equipped with infrastructure, including shops, schools, kindergartens and service facilities for several residential groups. After 1989/1990, the estate experienced a high level of public and private investment. At the centre of the estate, a large shopping and entertainment centre opened in 1996; public funding was invested in open space design and also supported housing companies to modernize the interiors and refurbish the facades of the buildings.

In the 1990s, due to the social changes in the transition period, Leipzig-Grünau was one of the districts that lost the most population: decreasing from a peak of about 85,000 inhabitants in 1987 to 40,397 in 2012, which represents a loss of 53% (City of Leipzig, 2012a; Table 1). The main drivers were suburbanization, migration to the stronger lanour markets of western Germany and relocation to other housing areas. Housing vacancies were the consequence. They reached a level of up to 26% in Leipzig-Grünau in 2003 and up to 19% in the city of Leipzig (City of Leipzig, 2012b). In Leipzig-Grünau, more than 6800 flats were demolished after 2000, to counteract the high vacancy rate (City of Leipzig, 2010). In fact, demolition led to an upgrading of the visual appearance of the estate, due to lower housing densities and quantitatively more green spaces, which was appreciated by the majority of residents (Kabisch and Grossmann, 2010). Today, the population of Leipzig-Grünau still represents 8% of the total population of Leipzig. Out-migration has slowed down and even in-migration occurs, leading to a slight increase in population.

With the institutional changes, the German housing market model was also adopted in Leipzig; with a general dominance of the rental market, owner-occupancy is of minor importance. In Leipzig-Grünau, buildings belong to several housing companies. In 2009, seven local housing cooperatives, five nationally and internationally operating private housing companies, and the municipal housing company held the stock. Some buildings faced compulsory (court-enforced) administration after the bankruptcy of a private enterprise, in the course of the credit crunch. The diversity of housing companies results in governance challenges regarding a comprehensive development strategy for the estate (Kabisch and Rink, 2015). Further ownership is related to specific locations within the estate. The older housing complexes are still owned by the local cooperatives, whereas the private companies and the compulsory administration are concentrated in the younger housing complexes.

Research data and analytical methods

The data analysed in this paper come from a long-term study initiated in 1979, to monitor housing satisfaction and perceptions of the estate. The nine surveys cover the years from 1979 to 2009 and thus span the socialist period and the political changes in the transition period (Table 1). The most recent data collection was carried out in June 2009. This long-term observation[1] of one single estate, in this form, is unique in Europe. Nevertheless, any social science survey covering this period definitely saw many changes in the indicators used, the topics addressed and in the formulation of questions. However, some indicators were maintained over the entire period, including indicators of estate evaluation and housing satisfaction, as well as the categories that captured educational status.

The sample is not a panel study, following certain populations; rather, it tracks small-scale clusters of addresses that represent the spatial structures and proportions of flat sizes. The sample size has grown over the years, due to the growth of the neighbourhood and, more recently, due to differentiations within the estate, such as the changing ownership structures described above. To check for representativeness, the age structure of the surveys was compared to the estate's age structure, using municipal statistical data. Differences in the 2009 survey were marginal, not exceeding 1% per age group. The 2004 survey had to be weighed slightly to meet the proportions of the given population. The data from the previous surveys were used as published by Kahl (2003). Due to a specific survey method that was based on interviewers who personally went to residents to deliver and re-collect the questionnaires (described by Kabisch, 2005), return rates, in terms of collected questionnaires, reached between 79% and 94%.

In addition, data from Leipzig's statistical office provide information at the district and city levels. They were used to compare the results of Leipzig-Grünau with those from the entire city. Data on age structure are based on the municipal registry. Data on educational status and household income stem from a biannual municipal survey conducted by the statistical office of the City of Leipzig. Income data reflect mean available income of households at the time of data sampling.

Our interpretation of the data is, further, based on long-term research on the estate in various research projects, for example www.shrinksmart.eu and www.urbandivercities.eu. In these projects, we conducted a number of qualitative interviews with residents and local experts concerning the governance of the estate, strategic planning, owner strategies and residents' perceptions (see research reports).

Data analysis

The data gained by the questionnaire survey and the statistical data were analysed using both descriptive statistical methods and a one-way analysis of variance (ANOVA). The descriptive analysis reveals the long-term development of social status characteristics and

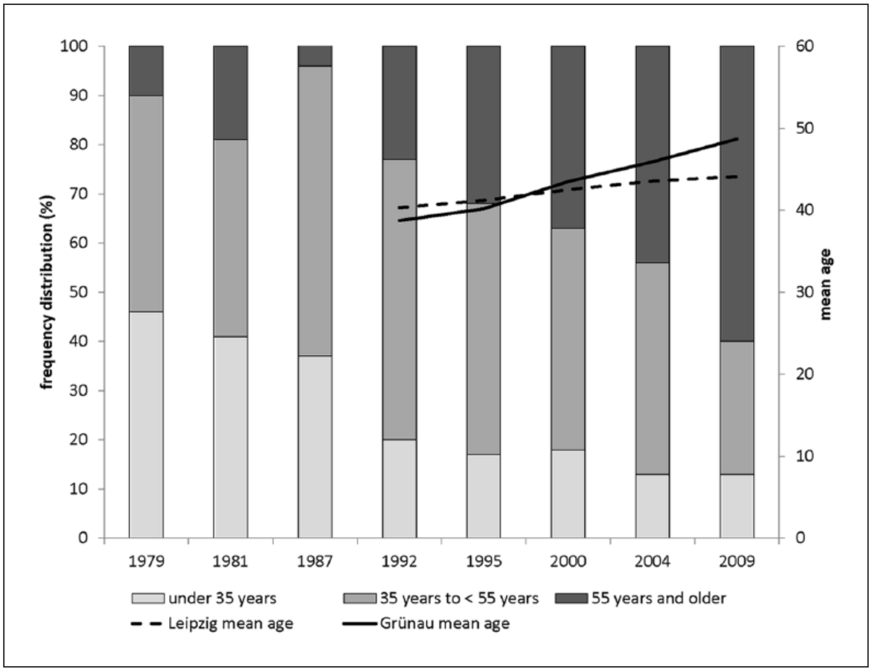

Figure 2. Distribution of age groups over years for Leipzig-Grünau and mean age for Leipzig-Grünau and Leipzig.

of demographics of the whole estate. It uses the results from the nine surveys, and compares them with data for the total city, to interpret the trends. The ANOVA and subsequent post hoc tests for multiple comparisons were performed to explore whether significant differences exist between mean household incomes within sub-groups, as an indicator for social status. The sub-groups consist of location in area, ownership and whether or not refurbishment of the inhabited buildings was performed. ANOVA analyses were conducted for the years 1995, 2000, 2005 and 2009, to identify possible changes over time.[2]

The development of the social and demographic characteristics of residents in Leipzig-Grünau from 1979 to 2009

Demographic development

The most dynamic changes in the social dimension occurred in the age structure of Leipzig-Grünau's residents, with a pronounced and steady change towards an older population (Figure 2). This development has two main drivers: the ageing-in-place of residents who first moved in when the estate was constructed, and the out-migration of younger residents during the 1990s and 2000s. In contrast to estates in cities with housing shortages, the oversupply in Leipzig did not foster an influx of new and young households into the district. Even though the entire city was also ageing, it demonstrates an unusually strong dynamic in Grünau. Whereas Leipzig's mean age was 40.3 in 1993 and increased to 44.0 in 2011, the changes were more significant in Grünau, with mean ages of 38.7 and 49.3, respectively.

As with age structure, household size has also become inverted within 30 years. The earlier dominance of family households turned into a dominance of older, relatively small households. In comparison to the overall city, the district has an above-average share of older one-person households aged 65 and older (18.5%; Leipzig: 16.0%) and senior couples (21.9%; Leipzig: 14%), and also an above-average share of single parent households (7.6%; Leipzig: 3.0%; for a detailed discussion of the demographic development, see Kabisch and Grossmann, 2013).

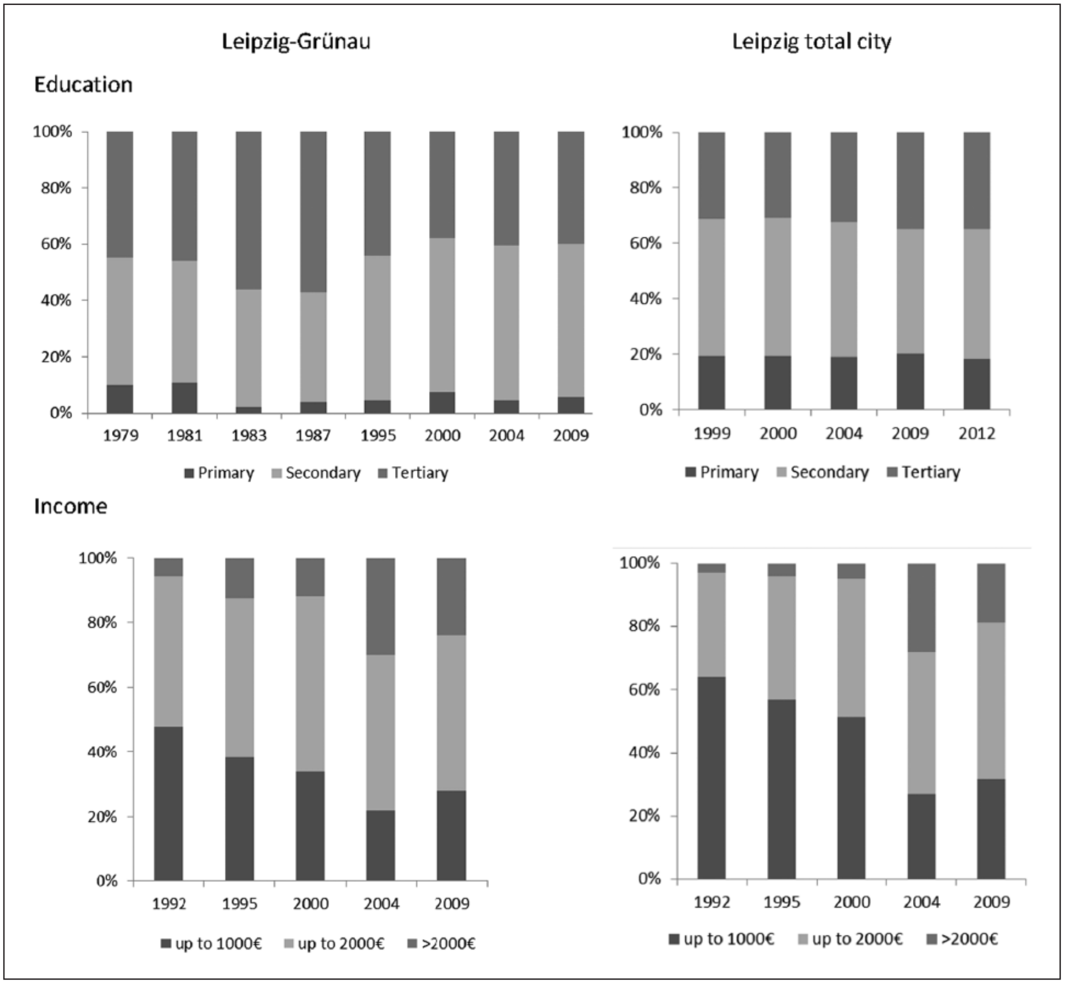

Figure 3. Educational level and income distribution of residents in Leipzig-Grünau and in the city of Leipzig.
Note: The classification of former East German educational levels is adopted from Hadjar and Berger (2010).

Development of the social status

The analysis of whether the very substantial out-migration in the 1990s and 2000s impacted on the social status of residents yielded the following result: out-migration has not altered the educational level of the remaining residents to a significant extent (Figure 3). The share of respondents with higher education decreased only in the 1990s, following an increase during the 1980s. This drop in the 1990s was mainly caused by a relative decline in respondents with technical college education, due to generally high out-migration rates at this time. The share of respondents with tertiary education returned nearly to the level of the 1970s and early 1980s and remained stable over the following years. By comparison, the educational level in the estate has always been – and still is – higher than in the overall city of Leipzig.

Income and employment status, two other important indicators of social status, are comparable since the 1990s. Political systems have changed and, thus, the social differentiation of the city's inhabitants in general, and the currency also changed twice. Only an approximate comparison of income development

Table 2. Share of selected social status indicators (%) in Leipzig-Grünau's housing complexes (HCs) in 2009.

Indicator		HCs 1–3	HCs 4 & 5.2	HC 5.1	HC 7	HC 8	Estate
Age groups	<35 years	**6.3**	10.5	14.3	**19.2**	18.9	13.3
	>55 years	**74.8**	58.5	61.2	55.8	**47.7**	59.8
Occupational status	Full time	26.2	**20.7**	**31.3**	28.9	23.1	25.3
	Unemployed	**8.5**	14.1	10.1	11.6	**22.2**	13.3
	Pensioners	**54.6**	48	41.4	35.5	**32.4**	43.4
Educational status	Prim. educ.[a]	**3.2**	5.3	7.3	6.8	**8.4**	6.2
	Tert. educ.[b]	**44.4**	40.7	42.7	37.6	**35.5**	40.2
Income	Low income	**0.8**	6.1	6.3	8.3	**9.3**	6.0
	High income	**51.7**	41.3	52.6	39.8	**30.9**	43.2

Note: Lowest and highest values are marked in bold. Low income refers to <500 Euro monthly household-net-equivalence (HNE) income and high income to >1500 Euro monthly HNE income.
[a]Share of respondents without professional qualification.
[b]Share of respondents holding a university or technical college degree; see classification by Hadjar and Berger (2010).

over time is possible for the period between 1992[3] and 2009 (Figure 3). The income of households among the respondents in Leipzig-Grünau increased in the transition period, especially for upper-income groups. Given that household size declined simultaneously, this represents a factual income increase. Over the years, income levels, however, also grew in the city overall, because of wage increases and adaptations in civil service wages and pensions towards the West German standards. The average household income in Leipzig-Grünau over the years was slightly below or above the city's average.

In recent years, the unemployment rate, measured as the share of unemployed among working age residents, has decreased slightly to 14% in Leipzig-Grünau, but remains at a higher level than the city's average (10%). The absolute number of unemployed residents in Leipzig-Grünau, however, declined considerably, due to ageing, with households changing their employment status to that of pensioners. In summary, social status indicators did not indicate the presence of a decline in social status.

The internal socio-spatial differentiation of Leipzig-Grünau and its drivers

Despite the relatively stable social status of the estate as a whole, the estate is not a socially homogeneous space.

Taking age, income, educational status and unemployment rate as indicators of socio-demographic status, we see that the main differences exist between the older housing complexes (HCs 1–3) and the newer housing complexes HC 7 and HC 8 (Table 2). Demographic ageing notably affected HCs 1–3, where the percentage of residents older than 55 years of age is nearly 75%. HC 8 shows significantly lower values, with less than 50% of residents older than 55. However, HC 8 has, simultaneously, significantly higher values for unemployment – more than 22% – whereas the mean value for the whole estate is 13.3%. HC 8 also has the lowest share of residents with tertiary education and the lowest share of high-income households, that is, with more than €1500 household income per month. In addition, the older complexes, HC 1 to HC 5.2, have significantly higher level of tertiary education, with more than 40%, and larger shares of both high-income households and low unemployment.

Obviously, an internal socio-spatial differentiation in social status exists. To assess whether these differences emerged over time or are recent developments, we also investigated their temporal development. Figure 4 shows that residents in all housing complexes aged in their districts over time, with the highest rate in HCs 1–3. The share of respondents with tertiary education was already low in HC 8, even before the political changes, whereas it remained high in the old HCs 1–3.

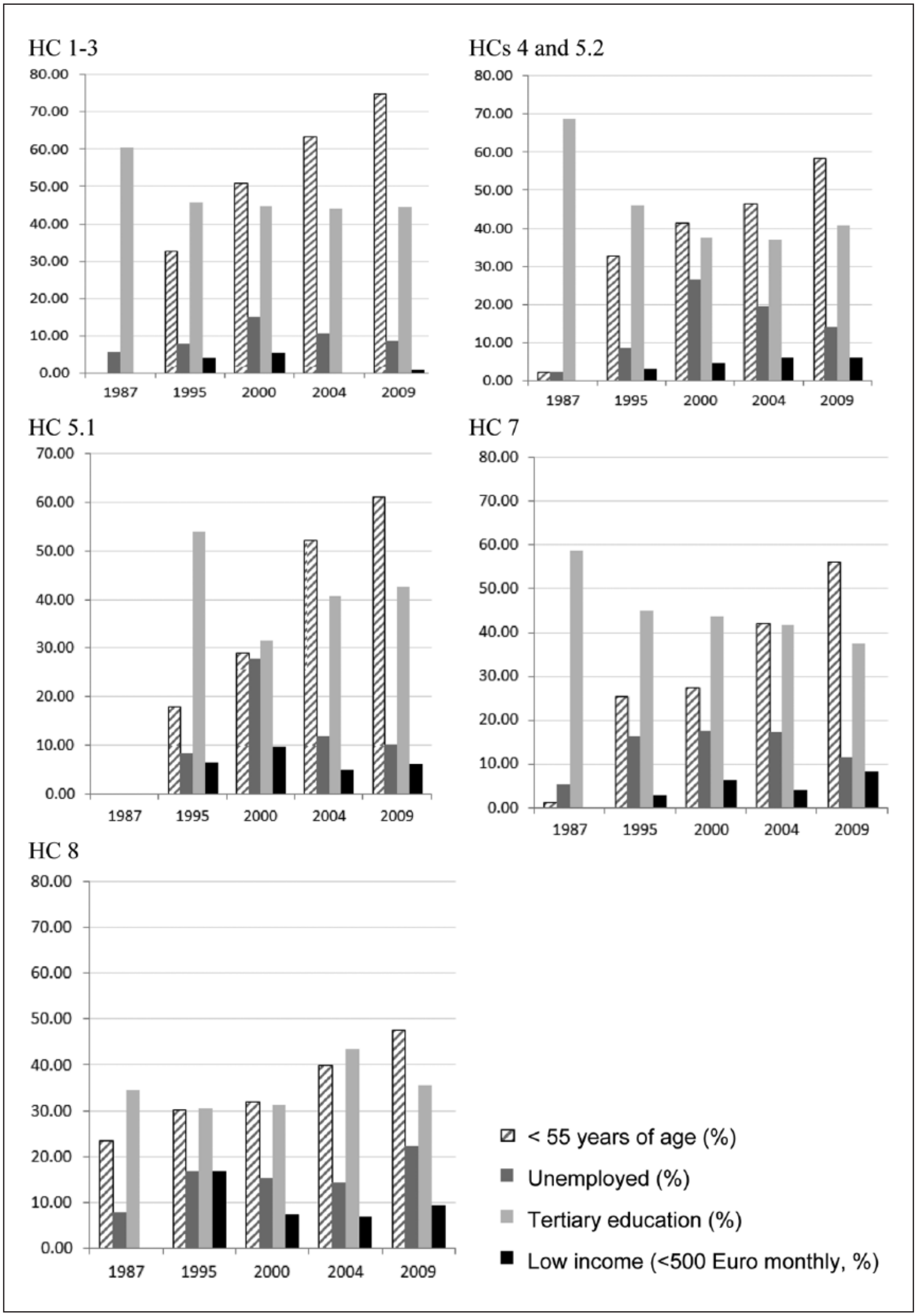

Figure 4. Development of social status indicators within the different housing complexes: 1987–2009.

However, Figure 4 also shows that the development of social status indicators oscillated over the years and across housing complexes. In particular, the unemployment rate fluctuated in all housing complexes. For instance, unemployment was higher in 2000 in HCs 4–5.2, although it decreased in the following years. The unemployment rates mirror the development of unemployment in the city in general, where peak unemployment was also reached around 2000. Furthermore, the percentage of low-income households increased over time not only in HC 7 but also in HCs 4–5.2, whereas, in HC 8, it decreased in 2000, and rose again thereafter. The temporal assessment showed that there is no clear long-term trend and shifts that occur in social status may be easily reversed in the years to come – or intensified.

Several factors explain these developments. The first one relates to inherited differences stemming from the first wave of occupancy in the 1970s. Whereas, in the early years, it was a privilege to receive a flat in Leipzig-Grünau, it subsequently became more normal. Later on, during the completion of the most recent complexes, residents of former surrounding villages were moved to Grünau, to make way for brown coal mining. Their educational status was, on average, certainly lower than that of the foundation households in the first years. The quality of housing, in terms of densities, also decreased with time, so that residents "traditionally" perceived the older complexes to have the best quality and status. In addition, in some housing complexes, for example in HC 5.1, refurbishments were undertaken, demolitions of high-rise blocks was initiated and military barracks were replaced by an area of new single family homes, which suddenly made the estate attractive for affluent families.

A second factor related to fluctuating social status values in the housing complexes is ownership. The spatial distribution of ownership structures varies between these areas (Figure 5). The older parts had stable ownership structures, because houses are still owned by the same housing cooperatives and municipal companies that first built them in the 1970s. The younger housing complexes, by contrast, have been the hotspots of ownership turnover. Municipal housing companies and cooperatives sold parts of their stock to private companies. These companies are often under the control of international investment funds seeking to profit from the low real estate prices on the East German housing market (Bernt, 2005). Some of the investments have been speculative and led to bankruptcy in the course of the recessions of 2008/2009.[4]

Cooperatives intend to retain most of their houses in the complexes by encouraging their currently more affluent clientele to stay on. Only in some parts of the housing stock of the cooperatives is a larger share of residents with lower social status observable. Here, planning policies play a decisive role. In 2007, Leipzig's administrative bodies defined the younger HCs 7 and 9 as a "reconstruction belt". This meant that demolition should be concentrated here and infrastructure would be strategically reduced. This affected the strategies of companies and cooperatives, which, in turn, concentrated investment and upgrading attempts on HCs 1–5. Accordingly, the HCs 1–5 are defined as the "core of the estate", where infrastructure should persist and be concentrated. This strategy unintentionally may have led to the recent gradual social decline of HCs 7 and 8. Private housing companies are controlled through investment funds and, thus, need to follow specific instructions in terms of how much money can be invested and how much return on investment has to be generated over which period. This tends to restrict upgrading, even though some private companies invest more than others.

These changes in the institutional dimension result in specific allocation strategies of different owners. In order to avoid or overcome vacancies, a common strategy is to attract low-income and welfare-dependent households. Some of the private companies in HC 8 even openly advertise their stock with "welfare-dependent tenants welcome!" One cooperative deliberately directs households that have lower status to HCs 7 and 8 and keeps rents high in the older HCs 1–3, above the limits accessible for welfare recipients. In order to avoid conflicts, another private company explained that it allocates "trouble makers" only to certain buildings. The likely outcome of such strategies is a small-scale fragmentation, which the estate is beginning to experience, even within housing complexes. Interestingly, the significant differences in mean household income between the owners of the houses and the status of refurbishment are not reflected by location (Table 3). The mean household incomes over time are not significantly different between the housing complexes, although we showed

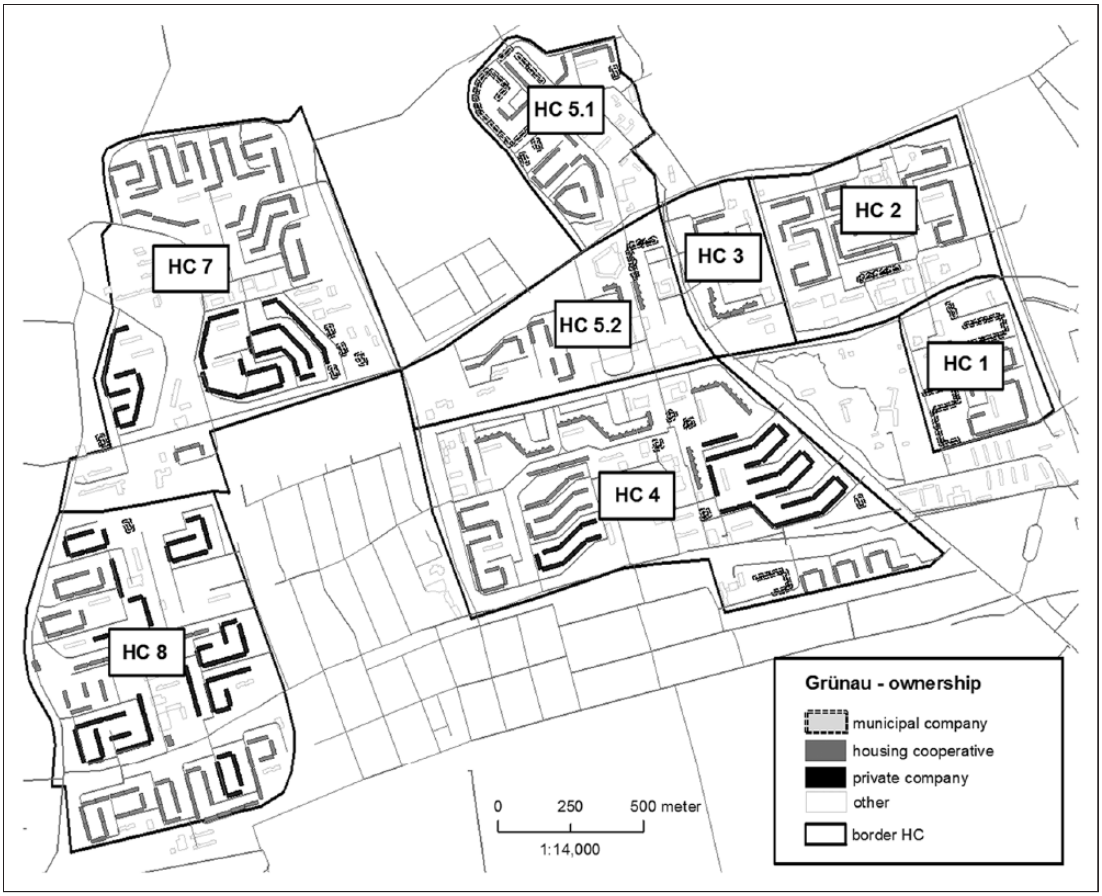

Figure 5. Ownership in Leipzig-Grünau in 2009.
HC: housing complexes.

that, for example low-income households are less present in the older housing complexes (see Figure 4). Thus, in the dimension of urban change, an internal social differentiation occurs between clusters of blocks belonging to various owners within one housing complex. In 2009, this was particularly the case in HC 8, where average household net-equivalent incomes per month range, in the most extreme case, from €666 in one block to €1549 just across the street.

Discussion and conclusion

Factors influencing the social composition of the housing estate

In terms of our first research question about how social status and social and demographic characteristics of residents in the housing estate have developed over time, we found evidence that social status remained relatively stable. A slow and multi-faceted change in the social and demographic structure of the residents was identified, but proof of a dramatic social decline was not found. Thus, today's social mix still stems from the time of the first resident influx, which is most prevalent in the older parts that are mostly occupied by older, long-term residents of higher social status. Parts of the estate with high turnover rates see a higher concentration of households of lower status. The main driver here is the allocation and stock development policies of the housing companies and cooperatives.

Nevertheless, instead of an overall social decline, we see an internal small-scale social differentiation. This differentiation – and this relates to the second research question about drivers of social change or

Table 3. Analysis of variance results: mean household-net-equivalence (HNE) income differences among groups of residents.

	Mean HNE income of groups of respondents in EUR[a]			
	1995	2000	2004	2009
Owner				
Municipal company LWB		**705**	**819**	946
Housing cooperatives		**822**	**1068**	**1018**
Private companies		**676**	**838**	915
Buildings in bankruptcy[b]				**716**
Housing complexes				
HCs 1–3	742	800	1124	**1082**
HCs 4 und 5.2	665	734	933	**980**
HC 5.1 (5)	716	674	898	**1006**
HC 7	642	794	981	950
HC 8	593	737	892	**826**
Refurbishment				
Refurbished	720	**797**	**1087**	**990**
Partially refurbished			937	**996**
Unrefurbished	651	**672**	**837**	**829**
Total	1355	1504	965	987

Note: Numbers in black bold and grey bold indicate significant group differences, as revealed by post-hoc tests, on a level of $p < 0.05$. As part of the ANOVA, tests for required distributional assumptions were performed. The Levene statistics were used to assess the equal variance assumption. Bonferoni post hoc tests were used as multiple comparison tests. In the case of unequal variances for the variables, the Welch statistic is reported and Tamhane's T2 post-hoc test was used.
[a]Values for 1995 and 2000 have been recalculated to EUR using the exchange formula of 2 DM → 1 EUR as it was applied in the currency reform.
[b]Only relevant in 2009.

stability – is a result of path dependencies, strategic planning and ownership differences. The institutional transformation has altered path dependencies. Whereas in the cooperatives' stock, status was mainly preserved, privatization has disrupted path dependencies. Practices of new owners allowed for population change and, hence, social change in some parts of the estate and thus, in turn, for spatial differentiation. The emergence of a mix of owners with different marketing strategies contributes to small-scale social fragmentation. It must be noted that these processes occurred in the context of shrinkage, whereby owners were generally happy about every additional tenant.

The *allocation policies of companies* are the key factors in driving the internal social differentiation of the estate. The ownership structure is, however, specific for the German context. Institutional reform in Germany has not led to wholesale privatization, even though the idea existed. Hence, housing estates were not subjected to market forces only, which sometimes resulted in dramatic decline as well as in investment in favourably located estates located in growing wealthier cities. Similarly, Maloutas et al. (2012) found that allocation rules form an important part of the explanation for segregation processes worldwide. In many other eastern European countries, the formation of gated areas at the urban fringe is part of local socio-spatial differentiation (Tsenkova and Polanska, 2014), but this is not the case in Leipzig.

Another important aspect is the specific *location* of particular parts of the estate and, thus, the inherited differences in their layout and the characteristics of the first residents who are still present in the area. Those housing complexes where residents have aged in place have, in fact, a higher social status, because mean income and educational attainment are higher. Today, we therefore observe how *path dependencies*, which stem from existing social, demographic or institutional structures, intersect with *current demographic, political and economic trends*. Notably, these first residents in higher age groups are also relatively satisfied with living in this area (Kabisch and Grossmann, 2013). A sense of belonging certainly plays a decisive role here. Our results confirm the results of Filius and Van Kempen (2005) that the place attachment of the elderly is a potential advantage for the stability of estates. Social stability that is maintained by this group of elderly residents, as shown for Grünau is, of course, an asset, but the achieved social stability is a precarious one, in the long run. For Grünau, paradoxically, the overall population decline in the city contributed to the stability of social structures, because a fast influx of households of lower social status did not occur. Given the current regrowth of the city and the upswing of prices on Leipzig's housing market, more welfare-dependent and low-income households may arrive when, at the same time, the socially mixed first generation of residents decreases in number, due to expected death rates. By contrast, infill development brings upper-market population segments into the area, and demand currently exceeds supply here. This can easily increase the status of the estate, or at least parts of it. Here, the strategies of companies are decisive.

In summary, we identified state-led funding for upgrading, and the commitment of local politics and administration, companies and cooperatives to maintenance and upgrading as factors contributing to the current stability of the entire estate.

Understanding the development of Leipzig-Grünau as a context-based path in multiple transformations

We acknowledge that Leipzig-Grünau is a case of a single housing estate that needs to be considered in the context of eastern German development that is, again, specific in the post-socialist realm. However, in terms of conceptualization, this case study contributes to more general debates about the trajectories of change in large housing estates in Europe. Referring to the model of multiple transformations proposed by Sýkora and Bouzarovski (2011, Figure 6), we suggest combining the dimensions of transition with analyses of the respective context.

In summary, the establishment of market forces and openness to global capitalism (*institutional transformations*), together with prevailing path dependencies, affected social differentiation and demographic change (*social transformations*) that impacts on urban space (*urban transformations*). The institutional transformations, as described above, have occurred relatively rapidly, compared to other countries. The national context, including reunification and an implementation of western German institutions, laws and welfare mechanisms, has been decisive in this respect. This has stimulated the mobility of residents towards other regions or to other housing market segments. The social transformations, especially in the local and regional context, have led to increasing poverty and ageing in the overall city. For the estate, this resulted in a demographic decline, followed by a reduction of available housing through demolition. The relative social stability of Grünau is a result of private and public investment as well as of a strong place attachment of first-generation residents. Social stability has been challenged by a gradual influx of households of lesser status and by the allocation strategies of housing companies. By now, this has led to an internal socio-spatial differentiation, rather than to overall decline.

The model is thus a useful starting point for explaining the development of a particular estate. We highlight, however, the need for extending the framework by acknowledging the specific *local* as well as the *wider context* (Figure 6) in order to understand the specific pathways of estates, which – to our understanding – provides the base of comparative research. The bundles of impacting factors differ from context to context, even if some of the factors are similar. Thus, when theorizing, attention needs to be paid to the *interaction of factors* rather than to the main drivers or downward spirals. In this fashion, we can achieve an analytic framework that provides the basis for comparative research on large housing estates in eastern Europe, and inspires neighbourhood theory in general. Large housing estates, with their physical similarities, their similar age and starting points provide a good setting to

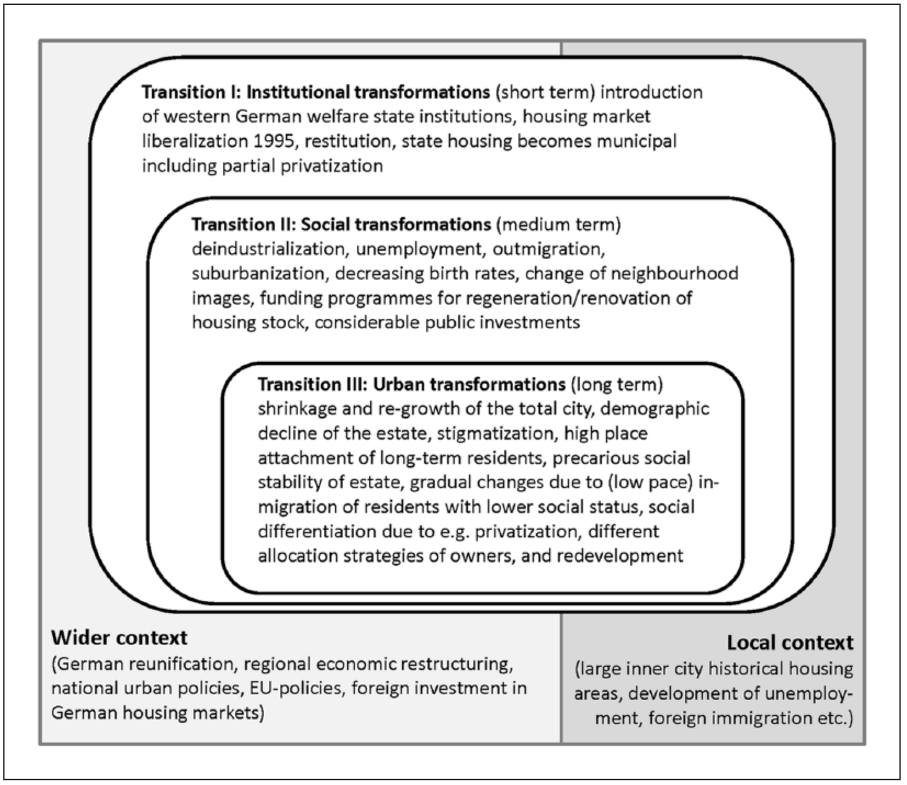

Figure 6. Multiple transformation related to a large housing estate in Eastern Germany: Leipzig Grünau.
Adapted from Sýkora and Bouzarovski (2011).

understand what actually makes the difference for specific trajectories of estates. This helps to overcome the concerns about social decline that are rooted in western experiences and make a contribution to neighbourhood change theories that respect a wider range of geographies.

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Notes

1. The long-term study started in 1979 under the guidance of Alice Kahl, professor for urban sociology at the University of Leipzig. She was in charge of the project until 2000 (Kahl, 2003). As her PhD student and subsequent colleague, (Sigrun Kabisch) assisted in all surveys. From 2004 onwards, Sigrun Kabisch became the leader of the study.
2. Previous years were not included, because income data are not comparable with those from former years.
3. For the data in 1992, 1995 and 2000, we recalculated incomes in Deutsche Mark (DM) to Euro in a 2 DM:1 Euro relationship, in conformity with the currency reform.
4. For instance, the international hedge-fund-based real estate company “Level One” bought approximately 28,000 flats in Germany, among them some 1000 flats in HC 8 in Leipzig-Grünau. After just two years, it faced insolvency. The buildings were in compulsory administration at the time of the last survey; the building stock was subjected to compulsory auctions: for some of the houses, even twice or more. Residents in these houses tend to have lower incomes.

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