

Enduring Contexts. Segregation by affluence throughout the life course

Abstract

Although temporal processes are fundamental to the ‘spatialization of class’, they remain understudied. This paper thus provides empirical evidence of residential pathways in the Oslo region over the life course; it does so by using population-wide data in a 24-year panel, while focusing on residency in affluent and deprived areas. By utilizing sequencing and clustering techniques, the analysis shows that exposure to dense poverty and affluence is reproduced and intensified within individual biographies; this is indicative of vastly limited life experiences from late adolescence into adulthood. Accordingly, the relationship between class origins and class destinations that is often reported in studies of class mobility is likely to be reinforced due to prolonged experiences in advantaged or disadvantaged surroundings over time. Rather than being ‘stuck in place’, however, the disadvantaged are more geographically mobile and less spatially isolated than their affluent counterparts. The socio-spatial patterns suggest that the affluent employ strategies of spatial withdrawal that may be enabled by a dual process of closure consisting of the extensive marketization of housing and classed sentiments of belonging. I argue that revealing the way in which spatially mediated contexts unfold throughout the life course seems to hint at spatialized processes of class structuration, thereby shedding light on contemporary inequality.

Keywords: Spatial inequality; neighbourhood trajectories; class formation; sequence analysis; social closure; spatial withdrawal

Introduction

Classic studies of ‘the power elite’ (Mills, 2000 [1956]) and the upper class (Baltzell, 1958) have emphasized, whether implicitly or explicitly, the way in which the rich and affluent have lived secluded in their own wealthy neighbourhoods. Key to such studies is an emphasis on the entwinement of the privileged, evident in intermarriages, intermingling, shared social club memberships and similar life experiences. The neighbourly environment was sought out to reinforce existing privilege by facilitating social integration and mutual recognition among the affluent (Pattillo, 2008), serving as a source of the ‘proximate structuration of class’ (Giddens, 1981: 109-10, 120). Contemporary scholarly interest in residential segregation, meanwhile, often draws on a ‘poverty paradigm’ (Sampson, 2012: 57) or a “‘social exclusion’ framework’ (Cunningham and Savage, 2015: 322) where the spatial has figured as an important factor in explaining the persistence of social disadvantage (Wilson, 1987) and where impoverished neighbourhoods become sites for the poor being ‘stuck in place’ (Sharkey, 2013).

However, recent findings seem to warrant the revisiting of a spatial dimension, also among the privileged. Indeed, the affluent have been shown to be just as – and sometimes even more – segregated than the urban poor (Reardon and Bischoff, 2011), even in societies that are archetypically ‘egalitarian’, such as Norway (Ljunggren and Andersen, 2015, Wessel, 2016). Concentration by affluence and by poverty should thus be addressed when seeking to shed light on the relationship between social and spatial inequality.

This paper thus explores how the spatial figures in systematic differences between the privileged and disadvantaged; it also offers a novel mapping of residential pathways over the life course. The aim is to contribute in three respects. First, I adhere to a recent emphasis on approaching *segregation by affluence* – voiced in *The Sociological Review* by notions of

‘alpha territories’ (Burrows et al., 2017) and ‘elite metropolitan geographies’ (Cunningham and Savage, 2015) – along with concentrated poverty. Second, I focus on an often neglected *temporal dimension* to spatial inequality by analysing how residential pathways are configured over the life course, rather than measuring levels of urban inequality at one point in time. Third, I attempt to show whether different types of biographies unfold in close proximity or at distant sites; I do so by analysing *spatial segregation over time* and by mapping types of residential trajectories.

Rather than measuring the extent of segregation between social groups at one point in time, I seek to trace differences in people’s environments, from when they leave the parental home in their late teens until their forties, a timeframe of 24 years. By focusing on the most highly privileged and impoverished areas in Oslo, I endeavour to explore the following research questions; how are individual residential trajectories structured over the life course in terms of affluent and poor environments? How are such residential patterns mapped onto physical space; do different types of neighbourhood careers evolve in close proximity or at more distant sites? Are types of residential pathways different in terms of geographical mobility – are trajectories in poor areas especially bound to place? How segregated are these types of neighbourhood careers during the life course? In combination, these questions tap into structured differences in the lived experiences of people over time and their corresponding trends of differential association, sentiments of belonging and capacities for capital accumulation that may cement further separation or integration along class divisions (Savage, 1996, Dowling, 2009, Bourdieu, 1999).

Crucially, the quantitative approach employed reveals how the urban fabric is socially and temporally patterned and the results support the suggestion that the privileged take part in spatial withdrawal and strategies of social closure (Atkinson, 2006). This represents an important addition to the evolving literature on ‘the spatialization of class’ (eg Atkinson, 2006,

Parker et al., 2007, Dowling, 2009, Atkinson et al., 2017, Burrows et al., 2017, Atkinson and Flint, 2004) and shifts attention towards class divisions in the study of residential pathways over time. The unfolding of context over the life course is increasingly underscored in urban sociology but remains largely linked to notions of ‘neighbourhood effects’ (eg Miltenburg and van der Meer, 2016, Sharkey and Faber, 2014) or ethnic/racial inequality in the US (eg Swisher et al., 2013, South et al., 2016).

By following the Oslo region at a time of increasing inequality in income and wealth accompanied by political initiatives to deregulate the housing market (Wessel, 2016), this paper exploits the fullness of Norwegian population-wide register data to scrutinize the relationship between social and spatial inequality. By utilizing social sequence analysis, differences between residential pathways between 1989-2012 are estimated by taking account of the duration of exposure and the ordering of types of residence. Empirical typologies of residential trajectories are then depicted using cluster analysis and physical proximity between the different trajectories are visualized by maps. Finally, segregation levels between types of residential pathways are explored by conventional indices of segregation, measuring both spatial evenness and spatial exposure.¹

Theory and existing knowledge

Spatial inequality and social class formation

Two strands of research highlight how urban inequality may reinforce class inequality. On the one hand, there is an evolving body of literature about the way in which space is interwoven with notions of classed belonging and a socio-spatial fit of classed habitus; on the other, sites are regarded as key arenas for the accumulation and conversion of capital and resources.

First, residential areas are not just locations in a geographical space; they may also signalize who and what belong within the symbolic boundaries of a site (Bourdieu, 1999),

arguably especially when social classes are spatially segregated (Dowling, 2009, Rosenlund, 2017). In juxtaposition to occupational identity, Savage et al. (2005: 207) argue that ‘one’s residence is a crucial, possible *the* crucial, identifier of who you are’, placing moving decisions ‘at the heart of contemporary battles over social distinction’. This notion is echoed in studies that emphasize a relative fit between class habitus and neighbourhoods as a key mechanism behind residential strategies (eg Butler and Robson, 2003, Benson, 2014, Benson and Jackson, 2013, Rosenlund, 2017). By extension, this research demonstrates how studying socio-spatial patterns can tap into possible ways whereby the spatial may give rise to collective identity-making and thus forge social class formation (see also Savage, 1996: 59).

Arguably, residential segregation in itself cannot give rise to social class formation which is conventionally understood to be contingent primarily on whether mobility between class situations is ‘easy and typical’ between generations and within the life course (Weber, 1978: 302). As argued by Giddens (1981: 107-112), such ‘easy and typical’ mobility closure fosters a ‘homogenisation of experience’ that increases the likelihood of classes becoming ‘social realities’. However, while dubbing class (im)mobility the *mediate structuration of class*, Giddens also introduces the concept of the proximate structuration of class as analytically different from mediate structuration. The proximate structuration of class encompasses an emphasis on a homogeneity of attitudes, behaviour, consumption patterns and lifestyles,² reminiscent of Bourdieu’s (1984) emphasis on the space of lifestyles in strengthening class struggles. Homogeneous groups of this kind are referred to as *distributive groupings* where the segregation of communities and neighbourhoods are the most significant (Giddens, 1981: 109). Both processes of mediate and proximate class structuration, especially when they coincide, promote a homogenization of experiences that increases the likelihood that aggregates of individuals endowed with equivalently advantageous life chances will establish social ties between themselves.

Second, spatial inequality may intensify class inequality by serving as a site for resource accumulation and capital conversion and facilitate ‘spatial profits’ (Bourdieu, 1999: 126-127). At the crux of neighbourhood studies lies the assumption that the social profile of one’s neighbourhood may enable or constrain individual life chances, for example through institutional availability, cultural adaptation or the acquisition of social capital (Wilson, 1987, MacDonald et al., 2005, Sampson, 2012, Sharkey and Faber, 2014). For instance, a recent study in the UK has found important geographical variation in one’s capacity to benefit from one’s privileged origins, even within high-status occupational groups (Friedman and Laurison, 2017). Norwegian evidence suggests that exposure to upper class neighbours during adolescence is independently associated with attaining higher education, elite credentials and upper class affiliation in adulthood (author).

Contextualizing class inequality in space therefore seems pertinent to stratification research. Although much effort in the literature is devoted to mapping patterns of intergenerational class mobility as a means to assess the reproduction of inequality, Sharkey (2008) draws attention to the intergenerational reproduction of *neighbourhood contexts*. Through the notion of ‘contextual mobility’, Sharkey (2013) analyses changes in the socioeconomic environment surrounding individuals irrespective of geographical mobility. By studying the relationship between individual neighbourhood contexts and parental contexts, he shows that social milieux are largely reproduced between generations with important implications for reproducing and solidifying (racial) inequality in the US (Sharkey, 2008, Sharkey, 2013).

This intergenerational emphasis on contextual reproduction entails incorporating time and place as important aspects of inequality; *trajectories* of contexts are acknowledged as fundamental in reproducing spatially embedded (dis)advantage. Crucially, this temporal dimension is key in linking spatial and social inequality. If neighbourhoods reinforce

advantage or disadvantage and facilitate ‘spatial profits’, such influence is arguably more persistent if exposure is durable rather than temporary, Sharkey (2013: 6, 18) argues.³ Correspondingly, if neighbourhood environments facilitate social recognition and symbolic distinctions within a classed topography, the likelihood of such boundary-making practices becoming manifest hinges on temporality (Bourdieu, 1999: 126). Narratives of belonging and classed identity-making are thus also embedded in *trajectories* of place-types which add to negotiations between the habitus and attachment to place (Benson, 2014). Hence, a reorientation towards *processes* of spatial inequality should involve an examination of contextual mobility ‘over individual lifetimes and across generations of family members’ (Sharkey, 2013: 19).

Sequence analysis and neighbourhood trajectories

Although recent contributions have investigated the association across generations, less is known about contextual mobility within individual lifetimes. Moreover, the empirical approach to analyse contextual reproduction often relies on an assumption that an adult outcome measured at one point in time or averaged across an adult lifetime (eg Sharkey, 2008, Sharkey, 2013) is a reliable indication of mature life experiences. However, collapsing adult experiences into one measurement may simplify the dimension of time emphasized at the outset. The need to investigate the unfolding of contexts over the life course by utilizing techniques such as sequence analysis is therefore advocated in studies of residential mobility (Coulter et al., 2016: 364-365).

In housing studies, a call has been expressed to move beyond temporal snapshots towards neighbourhood trajectories. However, only a few studies have implemented sequencing techniques to do so (Clark et al., 2003, Stovel and Bolan, 2004, Pollock, 2007, Coulter and Van Ham, 2013, van Ham et al., 2014, Lee et al., 2017). Some of these studies operationalize residential biographies as sequences of housing tenure (Clark et al., 2003,

Pollock, 2007), and one investigates moving desires and subsequent residential (im)mobility (Coulter and Van Ham, 2013). However, attachment to place-types has been explored by sequence analysis in only a few studies (Stovel and Bolan, 2004; van Ham et al., 2014; Lee et al., 2017).

Reminiscent of Sharkey's later concept of contextual mobility, Stovel and Bolan (2004) investigated an enduring attachment to *types* of places rather than movement across geographical locations. They have found that residential careers are largely maintained within specific place-types even when geographical mobility occurs – argued to indicate that geographical localities are embedded in social boundary-making. However, this study operationalizes context in terms of population size (the main contrast being sparsely populated rural areas and large metropolitan cities) and calls for further studying of sequential contextualization in terms of socioeconomic and social dimensions (Stovel and Bolan, 2004: 589). Two more recent studies are of particular interest in this regard as they deal with contextual socioeconomic mobility in the Stockholm region (van Ham et al., 2014) and in the US (Lee et al., 2017). The latter utilizes sequence analysis, demonstrates a typology of neighbourhood trajectories and finds significant variations in the contexts facing black and white low-income individuals over the life course. In the Stockholm region, van Ham et al. (2014) have followed adolescents from the year they left the parental home and onwards for the next 18 years and demonstrate sequences of exposure to disadvantaged neighbourhoods.⁴ Confirming existing research, a close relationship between one's parental neighbourhood and individual neighbourhood histories is detected; the overall tendency is for the intergenerational transmission of contextual poverty.

Although few studies investigate contextual mobility by means of sequence analysis, the literature generally seems to echo the 'poverty paradigm' in urban sociology (Sampson, 2012: 57); arguably, therefore, insights into the spatially embedded transmission of contextual

advantage and disadvantage require further analysis (Atkinson, 2006, Pattillo, 2008, Cunningham and Savage, 2015, Atkinson and Flint, 2004, author). The need to study spatial affluence and poverty is particularly important at a time when the urban landscape is becoming increasingly unequal (Wessel, 2016).

The case of the Oslo region

Arguably, the Oslo region, defined as Oslo and the surrounding county of Akershus (Wessel, 2016), is a geographical area which significantly contrasts with the popular conception of social democratic redistribution and egalitarianism. Although the city's contemporary features evoke the concept of a post-industrial city, Oslo was once a site for industrial production with a manufacturing sector at its peak in the 1960s with 25 per cent of the workforce employed there. The location of industry along the river dividing the city into east and west has cemented a symbolic distinction between an affluent west and a deprived east. This is a widely recognized distinction in terms of the city's geography. The recent growth of service industries, such as the financial sector, has accompanied increasing economic inequalities, making the region much more unequal than the rest of Norway (Wessel, 2016). Furthermore, along growing concentration of affluence in the economic distribution follows increasing segregation by affluence in physical space. For instance, Wessel (2016) has shown that the period 1993-2011 was characterized by intensified polarization between the top and bottom quintiles of the income distribution and he has documented particularly widespread segregation by affluence at levels surpassing corresponding measurements in cities such as Amsterdam, Rotterdam and Copenhagen.⁵ The spatial confinement of privilege is also the conclusion of Ljunggren and Andersen's (2015) investigation of residential segregation by class.

Within the context of a Scandinavian welfare regime, Norwegian housing policies seem to stand out; not only is Norway a country of home-owners but contrary to prevalent social democratic policies, housing is largely commodified and residency is left largely to the market. As noted by Brevik (2001), the characteristic social democratic emphasis on decommodification, ie government initiatives to avoid total dependency on the whims of the market, is immensely different in Norwegian housing policy. Just before the observational window of the present study, significant changes in housing policy occurred and the early 1980s marked a shift. Housing price regulation was abandoned, legislative measures enabled property speculation, credit was more readily accessible and general tax deductions for home ownership boosted market demand and a corresponding increase in house prices. Despite market crashes in the late 1980s and early 1990s, the period of observation bears witness to a housing boom; exceptional even in a European context, house prices in the Oslo region increased by 460 per cent between 1992 and 2012. With hardly any growth in public housing and a weak system of housing provision, finding a home arguably became a matter of ‘affordability’, especially as the mismatch between household income and housing prices continued to grow in the same time period (Wessel, 2016).

The period under study was thus a time when economic capital increasingly stratified one’s ability to choose where to live in the city and when inequalities in terms of such abilities intensified due to growing income inequality. It could therefore be expected that a lack of economic means to navigate the housing market caused the disadvantaged to become more stationary or localized (MacDonald et al., 2005) than the affluent and for it to be unlikely that affluent areas became sites for being ‘stuck in place’ (Sharkey, 2013) or ‘chained to place’ (Bourdieu, 1999: 127), something that might be more typical of the disadvantaged. On the other hand, urban processes such as gentrification may have displaced the urban poor, as highlighted elsewhere (Atkinson et al., 2017).

Methodology and research strategy

Access to population-wide register data offers an opportunity to investigate complete sequences over a period of 24 years (1989-2012). I construct an analytical sub-population of three successive cohorts to account for periodic idiosyncrasies such as initiatives in the housing market, the availability of housing and other period effects. Moreover, the analytical sub-population only comprises individuals who left their parental home at ages of 18-20 after the first year of observation (ie 1989) and who reside in the Oslo region during the observational window⁶ with non-missing residential information,⁷ retrieving the cohorts of 1969 (45.67 per cent), 1970 (33.69 per cent) and 1971 (20.63 per cent).⁸

Contexts are defined as the socioeconomic composition of neighbourhoods and are measured for each year. Neighbourhoods are measured as basic statistical units that represent geographically continuous and stable areas that are homogeneous with respect to business base, communication and building structure (Statistics Norway, 1999). These areas are measured at a small scale (median $\text{km}^2 = 0.31$) which helps capture individuals' immediate surroundings. The socioeconomic environment of each neighbourhood is computed as the mean of the combined annual income (earnings, capital income and self-employed income) of the adult population (ages 30-60) within each basic statistical unit.⁹ Residential contexts – the socioeconomic place-types – are then defined as the percentile distribution of the mean aggregated income of neighbourhoods in the region using cut points at p5, p20, p50, p80 and p95.¹⁰

The overarching goal of sequence analysis is to estimate the level of similarity between pairs of sequences by accounting for the whole list of states. The technique most often applied to calculate similarities is the optimal matching algorithm that takes account of the duration of states and their specific ordering. For instance, long successive states of affluent contexts in late adolescence are arguably different from an equally long exposure to

affluent surroundings in one's forties. Although duration is important in estimating similarities of pair-wise sequences, the specific ordering of the states also comes into play. Optimal matching relies on finding the least expensive route to changing one sequence into another by using three basic operations; substitution and insertion/deletion (indel). Each of these operations requires an assigned cost that makes an operation more likely in the matching procedure. Setting a substitution cost matrix – ie the cost of each state-pair substitution – is often considered to be one of the most pivotal tasks in such analyses as it directly influences the resulting dissimilarity matrix (the level of similarity between pair-wise sequences). In this analysis, I follow Studer and Ritschard (2016) and define costs so resemblances in future events are emphasized. The outcome of the sequence analysis is a matrix that indicates how dissimilar each pair of sequences is. To generate typologies from this matrix, I employ cluster analysis using a combination of the Ward-linkage and partitioning around the means (PAM) (Studer, 2013). The cluster analysis thus allows for groups of sequences to be detected that are similar in the ordering and duration of states, ie the way in which groups of neighbourhood trajectories differ in the timing and duration of particular socioeconomic area-types.

The results presented here depend on a number of methodological choices. First, the results appear robust to alternative substitution costs such as the percentile cut-offs or the transition rates observed. Second, the clustering procedure does not appear vulnerable to a different linkage criterion, such as an average linkage or different cut-offs in the income distribution. Third, deciding on the number of clusters was guided by multiple indices, as suggested by Studer (2013). These indices did not unequivocally favour a specific number of clusters and the solution of 4 was chosen partly due to these statistical measures but also because it corresponded the most favourably with the substantive interest of the analysis. In particular, this solution provided pairs of clusters of fairly similar sizes, making characterizations in percentages meaningful between similar cluster sizes. It should be noted,

however, that the indices suggest a fairly weak clustering of the data, although a pseudo-ANOVA reveals that statistically significant differences in the between variance of the groups are pertinent (pseudo $R^2 = 0.26$). See the appendix for a visualization of sequences that are distant from the gravity centre of each cluster and that help disclose the content of each group. As seen, however, even the sequences that are ‘poorly’ represented by the clusters are assigned to substantively meaningful groups.

To address questions of physical proximity, the residential typology was mapped onto the geographical coordinates. Moreover, in an attempt to disclose the extent to which individuals experiencing different types of residential trajectories become more integrated or segregated in the region over time, I have provided annual measures of spatial evenness and spatial exposure. In the sequence analysis, I utilize information about the aggregate adult population within each basic district, but when it comes to the segregation analysis, I use divisions between the individuals in the sub-population and this requires a larger geographical scale. Due to the limited number of individuals in the sub-population selected, I employ a slightly more aggregate geographical unit (*delområde*) developed by Statistics Norway to estimate segregation levels, where the 1,496 basic districts are reorganized into 189 area units. The number of individuals of the selected birth cohorts is still fairly low within each geographical unit (mean $n=14.22$), and a larger geographical level (mean $n= 37.49$) has been analysed as a means to validate the results (results available upon request). However, the trends are robust to this aggregate level, although the values are naturally lower (mean reduction in values; 0.10 for evenness and 0.13 for exposure).

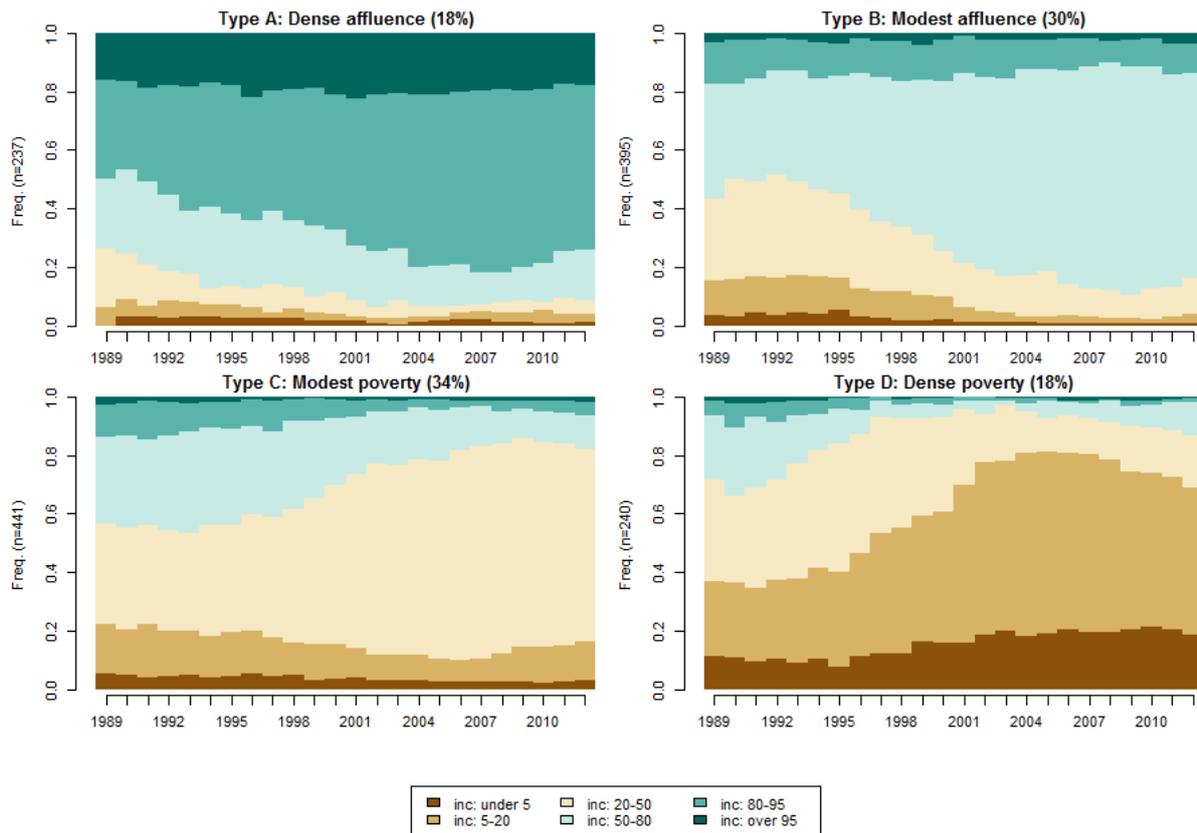
Spatial evenness denotes the extent to which groups are unevenly distributed in the geographical unit and the conventional measurement for this dimension of segregation is the index of dissimilarity. It compares pairs of groups and returns a value between 0 and 1, often interpreted to mean ‘the proportion of minority members that would have to change their

areas of residence to achieve an even distribution' (Massey and Denton, 1988: 284). Spatial exposure denotes the extent to which members of one group encounter members of their own group and annual measurements for each cluster typology are provided by the isolation index which varies between 0-1.

Results

Figure 1 depicts the four types of residential trajectories by using state distribution plots denoting the relative preponderance of each socioeconomic place-type within the clusters over time. The four graphs contrast neighbourhood biographies within affluent and deprived areas. A modest contrast can be detected between type B (n=395) and type C (n=441), comprising a little fewer than two-thirds of all individuals in the analytical sub-population, while a more profound contrast can be detected between type A (n=237) and type D (n=240). To ease interpretation, these clusters are dubbed *dense affluence*, *modest affluence*, *modest poverty* and *dense poverty*.

Figure 1: State distribution plot of each cluster. X-axis denotes time, y-axis denotes share of socioeconomic place-type

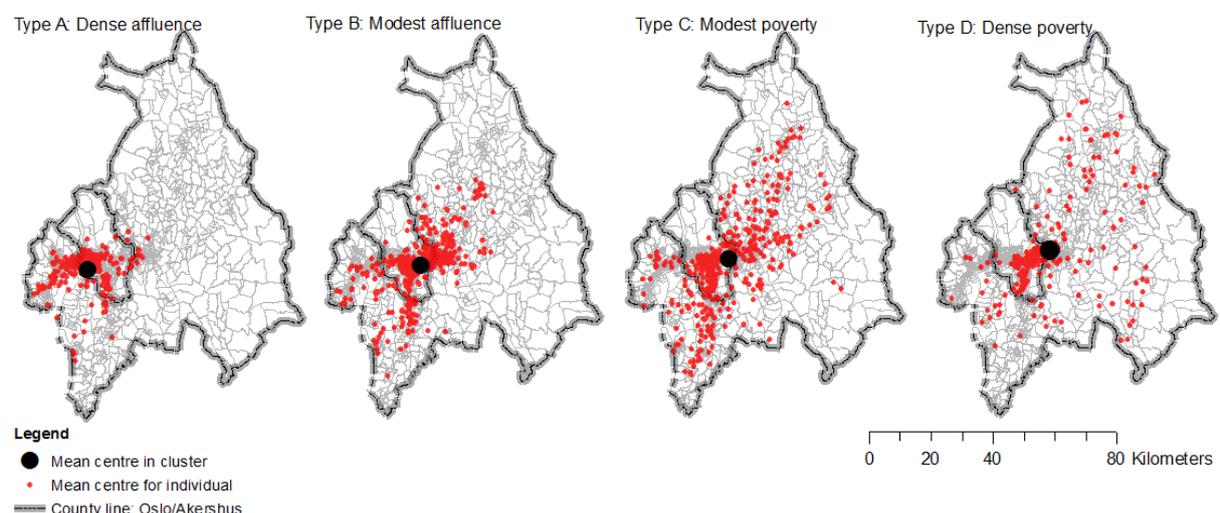


The first entries in these plots describe the environment of the parental home because the research design intentionally captures individuals who moved out after the first year of observation (after 1989). Arguably, these plots reveal that residential trajectories over the life course are related to parental neighbourhoods; at one extreme, 16 per cent of the *dense affluence* cluster (type A) grew up in the top 5 per cent of the richest neighbourhoods in the Oslo region – 50 per cent in the top quintile. For those who typically live in very impoverished areas over the life course (type D), 11 per cent originated in the bottom 5 per cent and 37 per cent in the bottom quintile of the neighbourhood distribution in 1989. This represents an important addition to the scholarly literature about the intergenerational reproduction of contextual disadvantage; equivalent associations at the high-end of the distribution appear equally persistent.

When looking at the temporal dimension within these clusters, the two trajectories of *dense* and *modest affluence* are characterized by an upwardly mobile trajectory, while the

opposite is true of the two latter typologies. In other words, the trajectories of *affluent contexts* (type A and B) also indicate increasingly affluent environments throughout the life course, whereas trajectories in *poverty contexts* (type C and D) typically indicate a tendency to live in more impoverished environments over time. Within the cluster of *dense affluence*, for instance, adult age is typically associated with very affluent environments, reaching levels of more than 80 per cent in the top quintiles and a maximum value of 22 per cent in the richest 5 per cent of neighbourhoods. Within the cluster of *dense poverty*, adult residency is characterized by approximately 20 per cent in the bottom 5 per cent category, whereas the combined bottom quintile reached a peak of more than 80 per cent when these individuals reached their mid-30s (year 2005), but with a modest decline at the end of the period. Of the two latter clusters, the categories immediately below and above the median became more dominant throughout adult life.

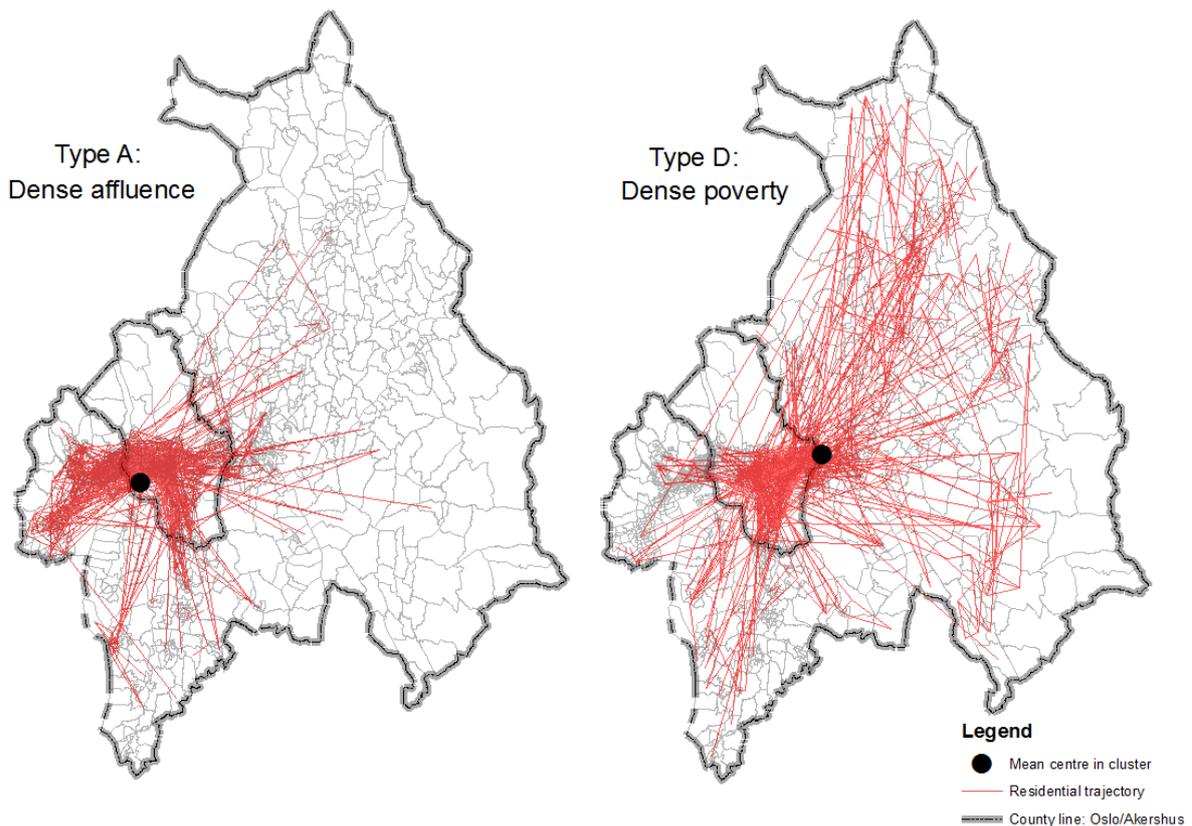
Figure 2: Typical location of dwelling by cluster



How are these types of residential trajectories embedded in the physical space? Figure 2 pursues this question by mapping each cluster. Each individual's typical site of dwelling is indicated by a circle. Figure 2 clearly illustrates that these contextual biographies are not only different in the social make-up of their neighbourhood careers; it also shows where such

biographies are embedded in the physical space. There is a clear east-west divide in the typical area of residence within the *dense affluence* cluster compared to the remaining clusters. The mean centre of each cluster, represented by the large circle on the map, may help identify the most typical location of these clusters; Oslo dominates all trajectories but the biographies of *dense poverty* (type D) and *affluence* (type A) are centred in the east and west respectively, whereas the biographies of *modest affluence* (type B) or *modest poverty* (type C) are situated in the eastern parts of the city but closer to the city centre.

Figure 3: Residential trajectory of the two clusters of *dense poverty* and *dense affluence*

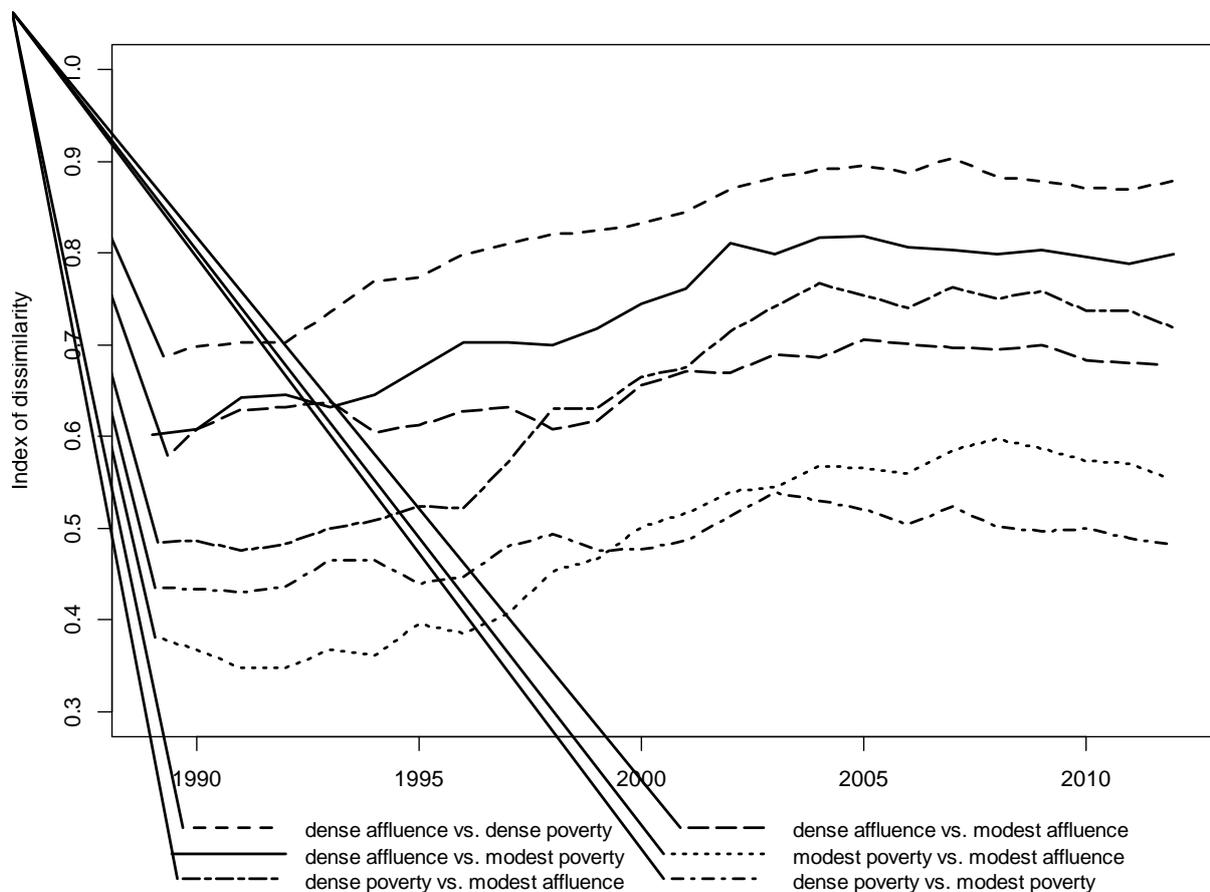


Differences are not only evident in the typical *location* of the clusters but also in the *scope* of geographical mobility over time. Figure 3 depicts all residential movements within the two clusters of *dense affluence* (type A) and *dense poverty* (type D) by individual lines per residential history. This figure seems to contradict the theoretical expectation of immobility in

areas of poverty; instead, the scope of spatial mobility within the *dense affluence* cluster (type A) is highly limited to a small geographical region over time, whereas the cluster of *dense poverty* (type D) is more mobile in the region. This is more in line with the notion of a mobile existence by the disadvantaged, as suggested by Atkinson et al. (2017).

Although these maps add to our understanding of the ways in which contextual experiences are embedded in physical space, they omit temporality. No data show whether specific localities are sites of residence in young adolescence or adult life. Segregation indices therefore help reveal a time dimension when assessing the level of spatial segregation between these groups. How separate are these groups from one another over time? Figure 4 depicts the index of dissimilarity for each cluster pair over time.

Figure 4: Segregation by cluster: index of dissimilarity by each cluster pair



This index clearly shows that most pairs of groups become increasingly segregated over time, reaching particularly high levels when these individuals reach their mid-30s. It should be noted that the period of study involved increasing segregation by income (Wessel, 2016) and that the spatial clustering of these types of residential trajectories follows a common trend in the area. However, there are fairly large differences between the pairs of groups; the *dense affluence* and the *dense poverty* clusters are especially segregated – at adult ages almost 90 per cent would have to be relocated in order to achieve an even level of settlement in the region. The *dense affluence* cluster is also highly segregated from the *modest poverty* cluster, suggesting that individuals who live in increasingly affluent environments over time are disproportionately unlikely to encounter individuals who have experiences from more impoverished sites.

Figure 5: Segregation by cluster: isolation index of each cluster



Figure 5 measures the level of isolation between these groups. Again, this index reaches a maximum value of 1 when a cluster is completely isolated and has a minimum of 0. All clusters become increasingly isolated over time although this trend stabilizes towards the end of these individuals' late 30s. Interestingly, the typology of *dense poverty* is the least spatially isolated, whereas the individuals with a typical biography of *dense affluence* appear significantly more isolated, reaching the highest values when they reach 30 years of age.

Discussion and conclusion

Investigating differences between the social contexts of people's lives adds an important dimension to our understanding of how structures of inequality have both a *durable* and a *spatial* manifestation within individual biographies. This analysis has shown that even in an 'egalitarian' welfare state, people go through life exposed to very different surroundings. Although the majority are differentiated by the relative prevalence of contexts in the 30 percentile points below or above the median, about one-third live in enduring contexts of poverty or dense affluence. Moreover, initial inequalities intensify throughout the life course; contextual experiences are increasingly affluent or impoverished at adult ages. These trajectories not only provide evidence of homogeneity in intragenerational biographies; the first-year characterization of the parental home environment also suggests the additional intergenerational reproduction of context. Almost 40-50 per cent of those who live in areas of dense poverty or dense affluence over time originate from neighbourhoods in the bottom or top quintile. Hence, a relationship between parental contexts and children's surroundings is not restricted to the reproduction of disadvantage, as emphasized in existing research (Sharkey, 2008, Sharkey, 2013, van Ham et al., 2014) but applies in a similar vein to affluent milieux. Other important aspects of inequality are also neglected if one fails to investigate concentrated affluence and restricts the analysis to a 'poverty paradigm' of spatial exclusion

and marginalization. Arguably, incorporating the concentration of wealth refocuses one's analytical attention on the strategic ways whereby the spatial also features in processes of social closure and class advantage (Atkinson, 2006, Pattillo, 2008).

The spatial scope of affluent living is significantly more limited in its geographical reach than the boundedness of contextual poverty. Although all types of residential trajectories are segregated, and increasingly so over time, trajectories in affluent environments are more isolated and particularly evident at high levels in adulthood. Individuals who are similar in their persistently affluent environments are thus in close proximity to one another in the physical space, largely confined to the west-end of Oslo and its neighbouring municipality to the west, Bærum. This dual tendency for social and physical proximity over the life course may add to processes of class formation and intensify existing class inequalities in at least two key ways, indicating 'subjective' dimensions in one's experiences and a sense of belonging as well as 'objective' capacities to reconvert and accumulate capital.

On the one hand, the biographical affinities identified in one's surroundings will probably reinforce 'homogeneity in experiences' (Giddens, 1981: 107-112) and homogeneous dispositions (Bourdieu, 1999) that are derived from social reproduction in the class structure (for Norwegian evidence in the upper class, see author). Incorporating the aspect of the life course in the design lends weight to the expectation that this proximity may have contributed to establishing patterns of acquaintanceship due to shared attendance at key institutions such as schools. Moreover, young adulthood has been emphasized elsewhere as formative in engendering a sense of belonging and self-identity deriving from place (May, 2017). As such, and borrowing from Giddens' terminology, the observed processes of 'proximate' as well as the tendencies for the 'mediate' structuration of class may have important implications for formations of social class in the region.

On the other hand, this dual tendency for social and physical proximity may make it likely that the spatial will become a site for the further acquisition of forms of capital (Bourdieu, 1999: 127) and help solidify and intensify urban patterns of inequality. These socio-spatial configurations mapped in the present analysis thus point to a need for further qualitative research, with particular attention on temporal elements of residential pathways to elucidate further whether biographical affinities in social and spatial inequality intensify and forge class formation in urban spaces.

The temporal confinement of privilege is more restricted than that of disadvantage and this seems to contradict to some extent the theoretical expectation that the disadvantaged will be more chained to place (Bourdieu, 1999: 127) or stuck in place (Sharkey, 2013). Instead, lacking resources does not exclusively make people stuck in place but economic means seem to enable a desired and intended spatial anchorage among the affluent (Atkinson, 2006). For instance, affluent households in Oslo seem particularly likely to relocate when their neighbourhood becomes less similar to their own economic standing (Galster and Turner, 2017), thus perhaps withdrawing to more homogeneous areas.

It appears likely that this intended *immobility* of the affluent partly stimulates the mobility of the disadvantaged. The dual increase in income inequality and housing prices as well as processes of gentrification in the urban centre may have pushed the disadvantaged towards the outskirts of the region. Given the likelihood that the poor live as tenants, an increasing lack of affordable rentable housing in the period may have facilitated the mobility of the disadvantaged.¹¹ In short, rather than being chained to place, it appears that the historical period under study is one that fostered a political and economic infrastructure that has dispossessed the urban poor and enabled voluntary immobility for those who could afford it. While Oslo is the capital city of a country that is often perceived to be particularly egalitarian, without ‘gated communities’ (Atkinson and Flint, 2004), its time-space

trajectories are more reminiscent of an urban space that serves as a ‘playground for the wealthy’, with corresponding processes of ‘ex-urbanisation’ of the urban poor, as observed elsewhere, such as in London (Atkinson et al., 2017: 266).

An emphasis on voluntary immobility and spatial withdrawal by the affluent does not, of course, require conscious cost/benefit strategies for decisions to move. As Bourdieu (2005) reminds us, decisions to move are structurally constrained or enabled by economic means, but also by one’s dispositions and, importantly, the political construction of housing policies – which may influence both factors – affect residential patterns.¹² Indeed, the political design of a deregulated housing market appears to offer important ways whereby social distance can be transformed into physical distance, suggestively by making economic means a key criterion for opportunities to move. Thus, the politically initiated marketization of housing may serve as a closure mechanism, making housing a matter of ‘affordability’.

The temporal boundaries of confined affluence may also be sustained by informal closure mechanisms. Existing research emphasizes that residency may serve as an expression and identity and this self-identifying ‘sense of place’ may be more strongly articulated in affluent areas, as has been shown elsewhere in Norway (Hauge and Kolstad, 2007). Given the very limited parameters of spatially bound affluence, a similar expectation appears reasonable in the Oslo region. Arguably, the more signs of identification are attached to place, the more likely it is that symbolic distinctions will maintain and reinforce symbolic boundaries, for instance due to outsiders’ reluctance to move into areas due to a sense of being ‘out of place’ (Bourdieu, 1999, Rosenlund, 2017). Hence, sentiments of ‘classed belonging’ (Benson, 2014) may be a useful mechanism of informal closure by cementing exclusionary practices that help seclude affluent living from the public at large.

Mapping sites of dense affluence and dense poverty in the present analysis thus produces the impression that the Oslo region is not only a segregated area as documented by

previous research, but is also a region where distinctive life biographies unfold in parallel but rarely coincide. It may appear paradoxical that an otherwise ‘egalitarian’ country such as Norway seems to facilitate the prolonged and extensive concentration of both privilege and disadvantage. This arguably demonstrates a little explored temporal dimension to class inequality within this social-democratic welfare regime. Given that high levels of both income inequality and neighbourhood segregation also characterize most European cities (Tammaru et al., 2016), the present mapping of contextual mobility patterns may be indicative of life-stories in other urban landscapes.

Structures of inequality have both temporal and spatial dimensions that are important in shaping the ways in which inequality is configured and reproduced. By attending to time and place, I have shown how spatial topographies and temporal biographies are socially patterned and I have argued that both ends of the contextual distribution should be subject to sociological research. The dominant approach involving investigating spatial poverty and exclusion could as such overshadow important ways in which the spatial mediates the reproduction of advantage and consolidate upper class cohesion. The homogenization of experiences derived from similar contextual impulses of wealth from one’s late teenage years into one’s forties may intensify homogeneous experiences derived from mobility closure in the class structure and durable exposure to advantaged surroundings may ease the likelihood of the further accumulation and acquisition of forms of capital. In the Oslo region, the reproduction of spatially mediated advantage may be sustained through a dual process of closure; informally through classed sentiments of attachment to place and through the politically initiated, and thus legitimized, marketization of housing. Sociologists thus need insights not only into how the disadvantaged become spatially excluded but also how the advantaged ensure spatial withdrawal.

Notes

¹ The sequence analysis was performed with the R package ‘TraMineR’ (Gabadinho et al. 2011), the analysis of maps was performed with the ArcGIS software, while the segregation indices are estimated with the R package ‘seg’ (Hong et al. 2014).

² Giddens distinguishes between two aspects of Weber’s *Stände*; i) the formation of groups due to commonality in consumption patterns and ii) a dimension of power derived from non-economic relationships denoting ‘honour’. Giddens dubs the former phenomenon ‘distributive groupings’ and argues that it comprises one element in processes of the ‘proximate structuration of class’ (Giddens 1981: 109).

³ See also Miltenburg and van der Meer 2016, Sharkey and Faber 2014.

⁴ This study does not appear to utilize any alignment algorithms in order to analyse similarities in contextual experiences.

⁵ Wessel does not find increased segregation among the top 1 per cent in the period under study.

⁶ A robustness analysis (not shown) reveals that an analysis that conditions only on residency in Oslo/Akershus in 1989, but that allows for subsequent vacating, finds typologies remarkably similar to those visualized in the present analysis.

⁷ Out of 31,056 elements in the sequences, 192 are imputed if a gap matches two preceding or following elements.

⁸ The discrepancies in percentages indicate that the cohorts’ inclinations to leave the parental home differed in 1989.

⁹ I have access to complete birth cohorts starting from 1955 and their parents. Thus, contexts are based on parental information and the 1955-1959 cohorts in year 1989, while more cohorts are included in the estimation of socioeconomic contexts in subsequent years.

¹⁰ Note that this involves analysing more extremes of the distribution than quintiles as used in other studies (van Ham et al. 2014; Lee, Smith and Galster 2017).

¹¹ I would like to thank X for pointing to this plausible explanation for the mobile trajectories of the disadvantaged.

¹² Housing agents have been argued to be key actors in *performing* class in Chile (Ariztía, 2014) and France (Bourdieu 2005).

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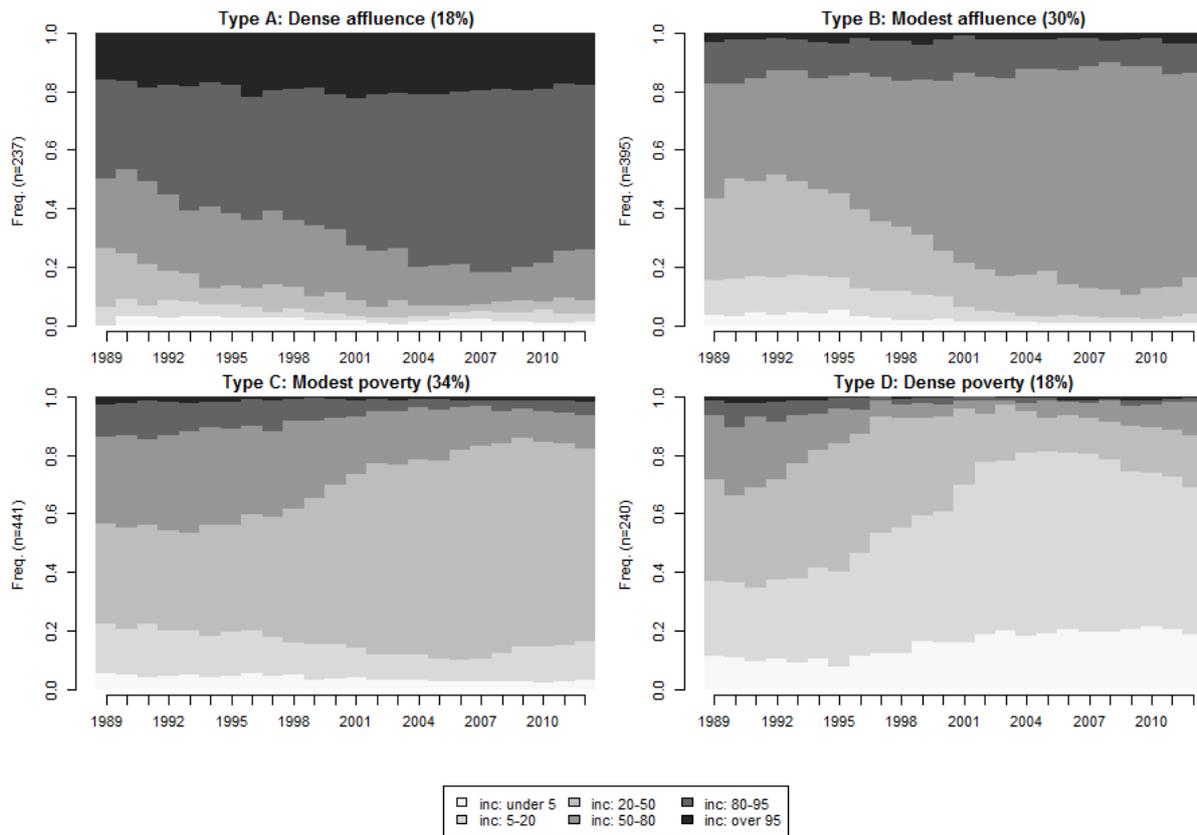
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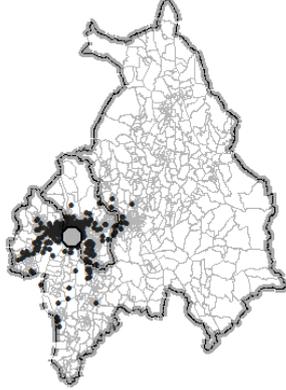
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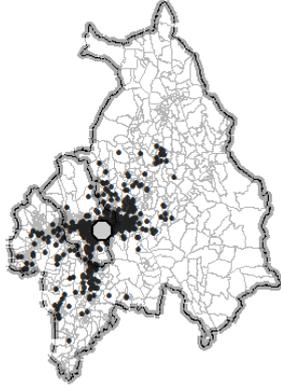
Black and white figures



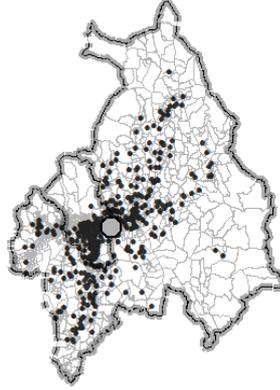
Type A: Dense affluence



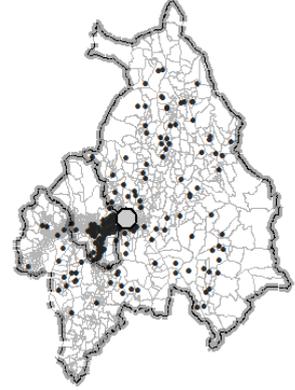
Type B: Modest affluence



Type C: Modest poverty



Type D: Dense poverty

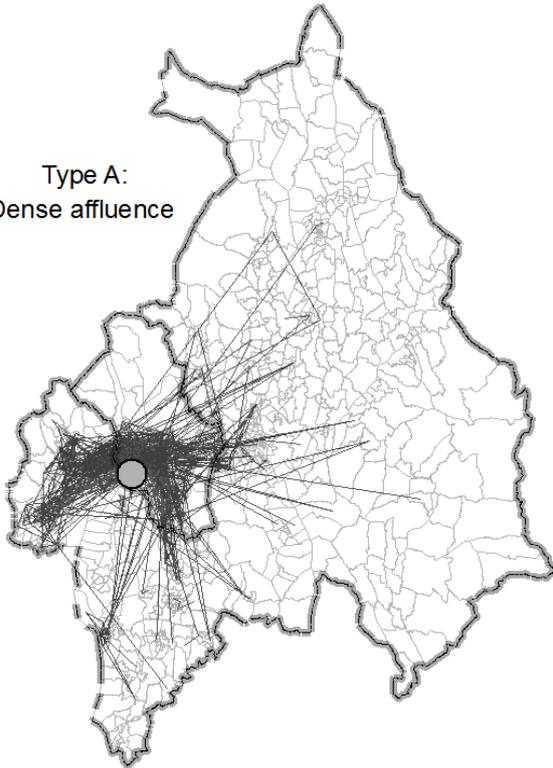


Legend

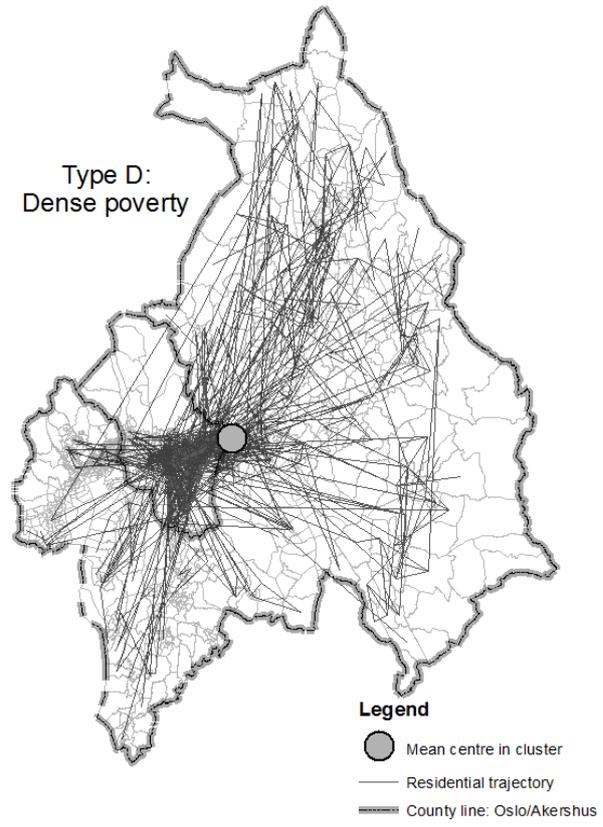
- Mean centre in cluster
- Mean centre for individual
- County line: Oslo/Akershus

0 20 40 80 Kilometers

Type A:
Dense affluence



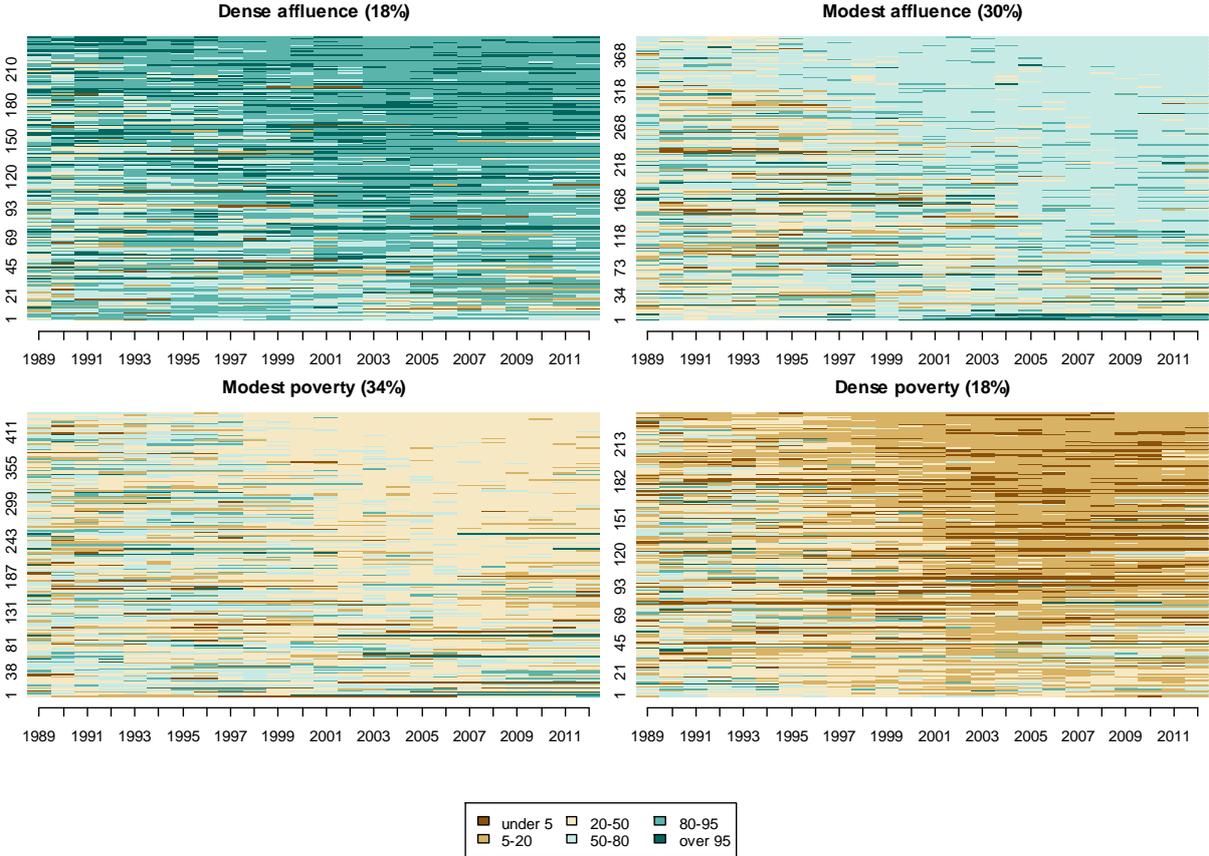
Type D:
Dense poverty



Legend

- Mean centre in cluster
- Residential trajectory
- ▬ County line: Oslo/Akershus

Appendix: Clusters ordered by silhouette values. Sequences that are the most poorly represented by the cluster solution are at the bottom of each graph (Studer 2013).



(black and white version)

