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3 Changing welfare context and income segregation in Amsterdam and its metropolitan area

Sako Musterd and Wouter van Gent

Abstract

Segregation based on income differences is central to this chapter. We aim to understand the most recent (2004–2011) socio-economic segregation process in (metropolitan) Amsterdam, while connecting it to the changing Dutch welfare regime, which from around 1990 is moving in a liberal direction. The social rented sector and the ‘regulated’ parts of the private sector are under pressure, while owner-occupancy is growing. Social housing is increasingly accommodating only those who have a very low income. Since housing is not spatially distributed in an even way, this affects the level of socio-economic segregation.

Introduction

When it comes to spatial inequality in Western European cities, the need to address high concentrations of poverty has been a recurring political meme over time. While this is understandable from a socialist or social democratic point of view, it is also of concern for social and conservative liberals. The aversion to segregation among centre-right politicians, policy makers and commentators might appear surprising as their advocacy of a free market reign contradicts the notion of intervention and regulation to limit spatial inequality. A liberalised housing market inherently means more segregation based on wealth and income. It is important to consider this because over the past two decades Western Europe (and beyond) has clearly been confronted with a neo-liberal turn (Harvey 2005; Peck and Tickell 2002). Neo-liberalisation has placed the interest of capital over that of labour, resulting in a political project that seeks to restructure welfare state arrangements. To be clear, neo-liberalisation does not imply *less* state intervention but a rearrangement of state institutions, policies and public resources to serve market interests (Harvey 2005). As an important factor in current financial capitalism, housing and housing policy are key to this restructuring and may serve as a lever (Aalbers and Christophers 2014; Malpass 2008; Ronald 2008). Expanding owner-occupancy allows for cuts in health care and pensions, as growing housing equity and lower housing costs in later life are presumed to cover more of individual welfare expenses. Furthermore, in financially liberal countries, the expansion

of owner-occupancy also serves the interests of financial actors and pension funds dealing in mortgage loans, derivatives and securities (Schwartz and Seabrooke 2008). So, the expansion of owner-occupancy is not only a symptom but also a cause of welfare state change.

Still, why would those who advocate free market capitalism also rally against segregation? One explanation is that politicians insufficiently define key concepts to leave room for manoeuvre in political discourse. They might have confused segregation with social inclusion and exclusion. Also, it may be that many do not fully grasp how socio-economic segregation comes about. In addition to political manoeuvring and ignorance, the practice of desegregation policies is also in line with the wish to expand owner-occupancy. In the last two decades, policies which seek to tackle segregation and poverty in European cities have come in the form of area-based interventions (van Gent *et al.* 2009). These interventions have sought to alter designated deprived areas' social compositions through renewal and housing market restructuring. This typically entails lowering the share of affordable and social rental dwellings in favour of more expensive and owner-occupancy housing to accommodate more middle-class dwellers. For this reason, gentrification scholars have cast social mixing policies as a form of state-led gentrification (Bridge *et al.* 2012; Lees 2008). Indeed, together with privatisation of social housing citywide and the lowering quotes for new-built social housing, social mixing policies are part of a policy which seeks to change the city's tenure and social composition, effectively reducing the number of low-income households (van Gent 2013).

Yet, explanations which rely on the political economy of capitalism, as has just been explained, are insufficient to fully understand the call for 'undivided cities' in the Netherlands and elsewhere in Western Europe. Here, anti-segregation policies are related to the issue of integration of immigrant communities (van Eijk 2010; van Kempen and Murie 2009; Uitermark 2014). While politicians and policy makers express the need to manage ethnic concentrations, anti-discrimination laws prohibit targeting ethnic groups directly. Instead, urban policies are formally targeting social-economic differences. Regardless, both political rhetoric and policy 'wisdom' assume a strong causal relation between 'social' and 'ethnic' segregation (Andersson 2006; van Gent *et al.* 2009). It seems irrelevant to them that this assumption can be challenged: first, because an increasing share of 'migrants' earns a middle or high income; and second, because the socio-economic position only explains 'ethnic' segregation to a limited extent (Peach 1999).

In this chapter we provide a recent description of social inequality (in particular income inequality) in the metropolitan area of Amsterdam and try to reach a better understanding of socio-economic segregation changes. We will also refer to spatial segregation of immigrants based on country of origin, broken down by income category, to investigate to what extent ethnic and income spatial inequality relate to each other in the Amsterdam context. We will analyse the spatial patterns and changes of levels of segregation for (grouped) income deciles and quintiles by applying standard indicators of evenness and isolation; this will be followed by a context-sensitive section in which we dig deeper in terms of analysing social

spatial patterns of segregation of low-income households. Before turning to these empirical sections, we will first elaborate on a selection of the literature in which theories of socio-economic segregation and changes of patterns have been dealt with that may help to frame the empirical findings.

Framing the dynamics of socio-economic segregation

Studies on the explanation of segregation are rooted in different approaches to science. They include viewpoints developed in behavioural science, including those derived from human ecology and choice-based research (Clark 2009; Robson 1975); in structural theory, with reference to economic restructuring, globalisation and mismatch theory (Hamnett 1994; Wilson 1987); and in institutional theory, much inspired by Esping-Andersen's (1990) work, which also was the basis for a new understanding of urban social segregation (Musterd and Ostendorf 1998). Theories on segregation also refer to the impact of historically grown and path-dependent developments (Burgers and Musterd 2002).

Here we argue that individual households will try to realise some preferences based on lifestyle and, more importantly, income and wealth. However, they will be constrained by the opportunities that are available, by economic and other structures that have developed over time, and by rules, regulations and institutions that affect the development of specific social and physical spatial structures. These dimensions are not independent from each other. Welfare state restructuring and a reliance on owner-occupancy for welfare provision will influence the distribution of economic capital within and between generations, and will therefore influence the level of choice people have (McKee 2012). We argue especially that the type of welfare state is crucial, because this may change the attitudes, values, rules and opportunities; the type of welfare state also impacts on how economic restructuring and globally organised forces 'play out' in certain places. Effects may be cushioned through redistributions (through social and unemployment benefits, high-level minimum wages, collective pension systems and housing subsidies or individual rent subsidies) – as is common in universal types of welfare states. However, effects may also become more pronounced because the welfare state model at stake may amplify inequality. This seems to be more common in residual types of welfare states (Forrest and Murie 1988; Musterd and Ostendorf 1998).

Because we take the position that the type of welfare state takes on a special position in the social organisation of cities, a change in type is obviously regarded as a crucial dimension. As mentioned before, several Western European states, including the Dutch, are currently undergoing a neo-liberal turn (Peck and Tickell 2002). Welfare state restructuring will likely create more choice for the affluent but less opportunity for those with less economic capital (Kadi 2014). This is expressed by the Gini coefficient. In a recent study on income inequality in the Netherlands, Salverda *et al.* (2013) found that over a thirty-year period the Gini coefficient rose from 0.242 in 1977 to 0.284 in 2010 (p. 10). Much of the rise occurred just before 1990, followed by a new increase around 2001; in between these years and after 2001 the coefficient turned out to be fairly stable, between

approximately 0.280 and 0.290. However, the authors showed that the tails of the distribution went further apart. Moreover, the upper income decile owns a fairly stable 70 per cent of total financial wealth (p. xi). The literature suggests that those who have a stronger economic position use that position to match their own characteristics as much as they can to the characteristics of the environment, resulting in higher levels of segregation, especially in liberalised housing markets (Boterman and van Gent 2014; Clark *et al.* 2013; Reardon and Bischoff 2011). This is helping the development and sustenance of socio-economically homogeneous residential environments (Sampson 2012). In a recent study, Musterd *et al.* (2015) found additional support for such types of dynamics. Based on large-scale data at the individual level for the entire population of the four largest urban regions of the Netherlands, they provided new evidence for the homogenisation that is currently evolving. They found that the larger the ‘income distance’ (positive or negative) between an individual and the median income of their residential neighbourhood, the higher the odds that the individual will move from that neighbourhood. Individuals who move tend to select destination neighbourhoods that reduce the social distance between themselves and the destination neighbourhood.

The liberalisation of urban housing markets has a particularly strong impact on the behaviour of middle-class and upper-class households. Compared to other households, they are more than others able to realise their wish for living in socio-economically homogeneous environments. Qualitative research has shown that middle-class households do not always directly refer to a wish to better match their own individual income with that of their residential environment, but use indirect arguments for such behaviour. Bridge (2006) and Boterman (2013) have shown that many middle-class households with children mention the quality of schools as among the prime reasons for moving into a homogeneous middle-class neighbourhood. The gentrification literature gives the core of its attention to this middle-class behaviour and politics, with a particular interest in the issue of displacement (Bridge *et al.* 2012; Lees 2008; Smith 1996). Whether the gentrification process would entail forced displacement has been disputed in some contexts, especially where households with relatively moderate socio-economic positions are more firmly protected by institutions and regulations (for example van Weesep and Musterd 1991). This was typically the case for the Netherlands and other states known for their regulated housing market and practices in support of households with relatively limited economic capital. This is not to say, however, that low-income households who are living in gentrification neighbourhoods will always stay at that level. Recent research has shown that many households with relatively low incomes rapidly realise social upward mobility after settling in such neighbourhoods (McKinnish *et al.* 2010; Teernstra 2014). Eventually, this may result in higher levels of homogeneity but ultimately in higher levels of segregation.

The demise of strong welfare states in which redistribution of affluence and social solidarity were key elements explains why ever firmer concepts are being used to describe the processes of segregation. When inequalities in society are increasing, this may ignite circular processes that further contribute to rising

inequality. Social inequality is said to be related to negative developments in a range of spheres. Wilkinson and Pickett (2010) showed evidence that in more unequal contexts crime levels are higher, health conditions of part of the population are worse, housing opportunities for the poor more limited, etc. This may create more fear for 'the other', and further disaffiliation of the middle class from the rest of the population. As a result, we may see the development of so-called encapsulated homogeneous environments, insulated gated or semi-gated communities (Atkinson 2006). Boterman and Musterd (2014) suggest that this stretches beyond the residential sphere. They studied 'cocooning' behaviour and looked at segregation from the perspective of individuals who are exposed to diversity. They investigated levels of disaffiliation (withdrawing to one's own socially homogenous environment) of the middle class in residential, workplace and mobility spaces and concluded that in all of the domains higher-income natives are the most frequently cocooning population category. Obviously, when exit strategies in the form of living in gated communities, cocooning, disconnection or disaffiliation are taking extreme forms, such as in some North and South American metropolises, very negative processes of estrangement may occur, resulting in a rise of the number and size of no-go areas. This will eventually impact on the urban condition and result in a devaluation of life in urban settings (Atkinson and Blandy 2013). This will be harmful to the poor, especially those with poor and very local – primary ties – networks, as Marques (2012) has shown for São Paulo, but fear for certain urban spaces will also reduce the use of urban territory for the middle class itself.

So far, the experience in (continental) West European cities is different. Here, state intervention has been more extensive over a longer period of time, assuaging segregation levels. Even though these welfare states are changing, they still experience the legacies of a period of strong intervention. They continue to have institutions and practices that help to reduce difference and segregation and continue to create difference from contexts such as those of the United States (van Kempen and Murie 2009). It seems that irrespective of the wider societal changes and regime shifts, not all middle-class households develop firm disaffiliating behaviour. Based on a series of interviews, Andreotti *et al.* (2013) argue that even the upper middle class is applying only 'partial exit' strategies. They seem to be willing to share some dimensions of life with other social groups, while simultaneously searching for stronger separation in other domains of life. They conclude that 'The responses of our interviewees were consistently more nuanced and complex than any simplistic theory about a drive to free-ride or withdraw from society' (p. 594). Even under 'neo-liberalism' there may be limits to the extent people want to segregate themselves from others.

Overall, the discussion of the literature, combined with the perhaps somewhat special situation we are coping with in the Netherlands, more precisely Amsterdam, triggers the first question to be answered in this chapter:

To what extent do we (as expected) find strong and increasing segregation between social classes in the metropolitan area of Amsterdam?

The mechanisms that are producing segregation are not all operating at the same level. Individual preferences of those who are able to exert some choice may result in search processes in which a certain level of social homogeneity is aimed for; this will likely occur at small-area scale and become visible in segregation levels at that scale. However, when institutions at a state level play a significant role, this may not just have consequences for the local level of segregation; it may also imply that larger areas, such as the entire metropolitan area, are affected. In contrast, when due to liberalisation and decentralisation the implementation of uniform regulation principles is no longer obligatory, regional variation in levels of segregation within metropolitan areas may develop. Due to historically grown structures this may lead to sharper distinctions between the core city experiences (with a long and varied urban history) and the rest of the metropolitan region (with often shorter and less varied urban histories). Moreover, the core areas in larger Dutch cities have experienced long periods of social democratic governments. Although the local political arena has changed over the past decade, the welfare state legacy remains. Its lasting impact is noticeable in social housing and part of the private rental sector that are incorporated in the housing allocation system; in Amsterdam, in 2015, this still was way over 50 per cent. The city of Amsterdam also still owns almost 90 per cent of the land. This has effectively enabled the realisation of mixed housing programmes in small-scale neighbourhoods. Nevertheless, over recent years we see new discussion about land ownership with pleas for selling land to individual home owners. Social housing too is under considerable pressure (Boelhouwer and Priemus 2014). These trends reflect and accelerate a wider transformation process towards a more neo-liberal urban regime (van Gent 2013), which may already be manifest in new levels of segregation at certain scales. This results in the second question:

Is there a difference between levels of segregation at different levels of scale?

Apart from focusing on changing levels of income segregation, on individual level interactions between income and ethnicity, and on the geographical scales at which processes occur, segregation issues can also be approached in a different way if detailed spatial level data is available. In the second empirical section we will analyse micro-level data on the spatial distribution of households classified in terms of income. In that section we will particularly focus on the lowest-income category: households with a so-called minimum income (limits set by law), typically the very poorest households, and on the municipality of Amsterdam only. We will also be able to investigate to what extent the changing patterns of concentrations of minimum-income households are linked with the changing housing market structure. Two questions will be guiding that analysis:

To what extent are the lowest-income households increasingly marginalised spatially?

What are the housing-related factors that impact on the changing spatial pattern of low-income households in Amsterdam?

We will provide answers to these questions in two empirical sections (below), after a short introduction of the data and methods used.

Data and methods

For answering the first two questions we used data from the SSD, the Social Statistical Database of Statistics Netherlands. This is an individual-level longitudinal database (total population, no sample) that enabled us to calculate precise distributions of the disposable household income, to select only those who could, in principle, be employed (those between 25 and 65 years old), to combine income and country of origin information before aggregating the information to the neighbourhood level, to differentiate between calculation for the Amsterdam metropolitan region¹ (in short: region) and for the municipality of Amsterdam separately, and to select only those neighbourhoods that included at least 150 households (Figure 3.1). The average neighbourhood size was (in 2010) approximately 3,700 inhabitants, but in the city of Amsterdam almost double that size.

We used income deciles and income quintiles for mapping location quotients and for calculating the index of segregation (IS), dissimilarity indices (D), the index of isolation P^* , and, taking into account changing sizes of income groups over time, also the (modified) index of isolation at the regional and municipal level on the basis of the income information, for 2004, 2008 and 2011 (see also the introduction of this book for more detail: Tammaru *et al.* 2016). This year-division

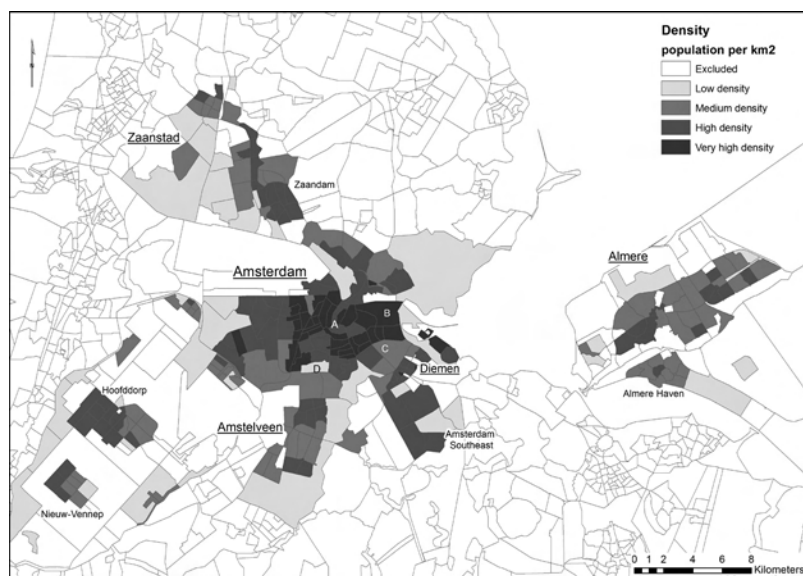


Figure 3.1 Amsterdam metropolitan region and the municipality of Amsterdam; A-Canal Belt, B-Eastern Docklands, C-Watergraafsmeer, D-South Axis.

enabled us to include the potential impact of the financial and economic crisis, which also hit the city and region of Amsterdam (Engelen and Musterd 2010).

The income groups are based on national income distributions. This means that the groups may vary in size at the lower regional and municipal level between categories and over time. Changing sizes may be the result of uneven population growth as a result of gentrification in Amsterdam's city centre, urban renewal at the city's periphery and new housing developments in the city and region. Also, there may be an uneven spatial impact of the economic crisis at regional and lower levels after 2008. Indeed, Table 3.1 shows an increase of higher-income groups between 2004 and 2008, followed by stabilisation, and an increase of lower-income groups after 2008.

For answering the third and fourth questions we applied data provided by the Department of Research and Statistics of the municipality of Amsterdam. This covers six-digit postcode-level data in which, among other data, the number of people with a minimum income per postcode was available, for 2004 and 2012. Amsterdam has approximately 18,000 six-digit postcodes – with on average some 40 inhabitants. Detailed spatial concentrations of households with a minimum-income have been constructed with a GIS application that has been developed by Urban Geography of the University of Amsterdam, together with the Department of Research and Statistics of the municipality of Amsterdam.

Table 3.1 Distribution of income groups in % at regional and at municipal level; disposable household income per neighbourhood, 2004–2011

		<i>Region</i>			<i>Municipality</i>		
		<i>2004</i>	<i>2008</i>	<i>2011</i>	<i>2004</i>	<i>2008</i>	<i>2011</i>
Quintiles	1	20.3	20.1	21.9	25.0	24.7	26.4
	2	14.0	14.5	14.6	14.4	14.8	14.8
	3	17.5	17.5	17.1	16.1	15.9	15.8
	4	19.4	19.5	19.2	16.6	16.7	16.7
	5	23.0	23.7	23.8	20.8	21.9	22.2
Deciles	1	10.7	10.6	11.4	13.4	13.5	14.1
	2	9.6	9.4	10.5	11.6	11.2	12.3
	3	6.8	7.1	7.4	7.2	7.6	7.8
	4	7.1	7.5	7.2	7.1	7.4	7.0
	5	8.4	8.3	8.3	7.9	7.7	7.8
	6	9.2	9.1	8.9	8.2	8.2	8.1
	7	9.5	9.5	9.5	8.3	8.3	8.3
	8	9.8	9.9	9.8	8.3	8.5	8.4
	9	10.6	10.9	10.9	8.9	9.4	9.5
	10	12.7	12.9	12.9	11.8	12.6	12.7

Source: Statistics Netherlands; Social Statistical Database (SSD); authors' processing and analysis.

Note: Distributions do not add to 100 because of the category 'unknown'. This category represents households with missing income data.

Empirical section 1: questions 1 and 2

The income dimension only

Starting with the (modified) index of isolation (Tables 3.2a and 3.2b), we see that in each of the years of measurement households which find themselves in the lowest- and in the highest-income brackets (quintiles and deciles) are spatially relatively most isolated from the rest, whereas those who find themselves in the middle-income categories are least isolated. The most isolated category is the category with incomes in the highest decile. This general picture is rather similar for the Index of Isolation and for the Modified Index of Isolation (MI).

Table 3.2a Index of Isolation per income quintile and per income decile, at regional and at municipal level; disposable household income per neighbourhood, 2004–2011

		<i>Region</i>			<i>Municipality</i>		
		<i>2004</i>	<i>2008</i>	<i>2011</i>	<i>2004</i>	<i>2008</i>	<i>2011</i>
Quintiles	1	0.244	0.241	0.253	0.269	0.266	0.279
	2	0.150	0.157	0.157	0.153	0.159	0.159
	3	0.183	0.184	0.179	0.166	0.165	0.163
	4	0.206	0.207	0.203	0.172	0.172	0.171
	5	0.286	0.292	0.287	0.266	0.279	0.274
Deciles	1	0.132	0.132	0.136	0.144	0.145	0.149
	2	0.119	0.116	0.126	0.131	0.127	0.138
	3	0.075	0.078	0.081	0.078	0.082	0.084
	4	0.076	0.080	0.077	0.075	0.078	0.075
	5	0.088	0.088	0.087	0.082	0.081	0.081
	6	0.096	0.096	0.093	0.084	0.085	0.083
	7	0.101	0.101	0.099	0.086	0.085	0.085
	8	0.106	0.107	0.105	0.087	0.089	0.087
	9	0.120	0.122	0.121	0.098	0.103	0.103
	10	0.186	0.189	0.182	0.184	0.195	0.186

Source: Statistics Netherlands; Social Statistical Database (SSD); authors' processing and analysis.

Table 3.2b Modified Index of Isolation per income quintile and per income decile, at regional and at municipal level; disposable household income per neighbourhood, 2004–2011

		<i>Region</i>			<i>Municipality</i>		
		<i>2004</i>	<i>2008</i>	<i>2011</i>	<i>2004</i>	<i>2008</i>	<i>2011</i>
Quintile	1	0.041	0.040	0.034	0.019	0.019	0.015
	2	0.010	0.012	0.011	0.009	0.011	0.011
	3	0.008	0.009	0.008	0.005	0.006	0.005

(continued)

Table 3.2b (continued)

	<i>Region</i>			<i>Municipality</i>			
	<i>2004</i>	<i>2008</i>	<i>2011</i>	<i>2004</i>	<i>2008</i>	<i>2011</i>	
	4	0.012	0.012	0.011	0.006	0.005	0.004
	5	0.056	0.055	0.049	0.058	0.060	0.052
Deciles	1	0.025	0.026	0.022	0.010	0.010	0.008
	2	0.023	0.022	0.021	0.015	0.015	0.015
	3	0.007	0.007	0.007	0.006	0.006	0.006
	4	0.005	0.005	0.005	0.004	0.004	0.005
	5	0.004	0.005	0.004	0.003	0.004	0.003
	6	0.004	0.005	0.004	0.002	0.003	0.002
	7	0.006	0.006	0.004	0.003	0.002	0.002
	8	0.008	0.008	0.007	0.004	0.004	0.003
	9	0.014	0.013	0.012	0.009	0.009	0.008
	10	0.059	0.060	0.053	0.066	0.069	0.059

Source: Statistics Netherlands; Social Statistical Database (SSD); authors' processing and analysis.

The difference between isolation levels in the region and in the municipality is limited, except for the lowest decile and lowest quintile when calculating the Modified Index. The general picture is that those who find themselves in the extreme categories of the income distribution are relatively most isolated; this holds for the regional and municipal levels. The one exception is the lowest decile at municipal level when calculated as a Modified Index. That decile shows a low level of segregation. This will likely be due to (older) students who are living in relatively mixed neighbourhoods in the core areas of the metropolis. Also, smaller clusters of social housing in relatively affluent neighbourhoods may play a role. We will return to these areas below. At municipal level those who are in the middle- and high-income categories (except for the very highest decile) are a bit less isolated than at regional level. The highest-income decile is most isolated at municipal level, both when calculated unmodified and modified.

Before the crisis started, levels of segregation defined as isolation were stable or slowly increasing for all income categories, while after the start of the crisis for most categories the level was stable or slightly decreasing, except for those with the lowest-income level (unmodified scores) who saw an increasing level. The pre-crisis experience seems to reflect the shift towards more neo-liberalisation, resulting in slightly higher levels of isolation. The limited drop in isolation of the poor may be a combined effect of the increasing share of the population in general that belonged to the poor and the policy of social mixing. The rising share of the poor after 2008 (unmodified) logically increases isolation, because the probability of encountering someone from one's own (low-income) category increases; when modified for the share in the region/municipality as a whole, the isolation in fact decreases (Table 3.2b). The policy of social mixing, which was particularly directed at neighbourhoods with the highest shares of low-income households, is

expected to have a dampening effect. The post-crisis experience is characterised by postponing the social mix policy in poor neighbourhoods. Urban restructuring in these neighbourhoods used to rely on the demolition of a substantial volume of old social housing, while rebuilding on the spot new and more expensive ownership housing, thus forcing more social spatial mix. However, with the crisis this policy came to a halt. In the Amsterdam region, demolitions dropped to 75 per cent between 2007 and 2011; in the municipality of Amsterdam to even 78 per cent, according to Statistics Netherlands. These processes implied increasing segregation levels for those with the lowest incomes (unmodified), but decreasing segregation for that category when modified. For the middle- and higher-income categories the crisis implied a strong reduction of residential mobility. Difficulties in selling housing for pre-crisis prices or in obtaining new mortgage loans meant that residential adaptation strategies were put on hold. Also, job loss likely led to a drop in income levels of the entire pre-crisis working population, regardless of place of residence. These two developments would lead to moderately increasing ‘spontaneous’ income mix in the neighbourhoods they lived in. This is in support of findings of Bailey (2012, p. 718), who states that ‘over time, the fit between individuals and their area weakens through social mobility. If people were not able to move, segregation would tend to fall as a result.’

In Table 3.3 we present the Index of Segregation for income quintiles and deciles. At regional and at municipal level, segregation levels for the lowest- and highest-income quintiles and deciles were almost stable before the crisis, and then

Table 3.3 Segregation Index for income quintiles and deciles, at regional and at municipal level; disposable household income per neighbourhood, 2004–2011

	<i>Region</i>			<i>Municipality</i>		
	<i>2004</i>	<i>2008</i>	<i>2011</i>	<i>2004</i>	<i>2008</i>	<i>2011</i>
Quintile 1 vs all others	0.249	0.245	0.221	0.151	0.149	0.133
Quintile 2 vs all others	0.131	0.139	0.135	0.125	0.135	0.132
Quintile 3 vs all others	0.097	0.104	0.101	0.076	0.084	0.085
Quintile 4 vs all others	0.137	0.134	0.126	0.083	0.078	0.071
Quintile 5 vs all others	0.260	0.255	0.240	0.269	0.272	0.255
Decile 1 vs all others	0.235	0.237	0.207	0.131	0.129	0.110
Decile 2 vs all others	0.234	0.227	0.214	0.171	0.177	0.172
Decile 3 vs all others	0.142	0.145	0.140	0.124	0.133	0.131
Decile 4 vs all others	0.111	0.120	0.116	0.107	0.119	0.115
Decile 5 vs all others	0.095	0.099	0.103	0.085	0.091	0.096
Decile 6 vs all others	0.094	0.100	0.093	0.063	0.071	0.069
Decile 7 vs all others	0.114	0.112	0.102	0.070	0.063	0.061
Decile 8 vs all others	0.138	0.135	0.128	0.092	0.089	0.080
Decile 9 vs all others	0.170	0.161	0.153	0.141	0.133	0.128
Decile 10 vs all others	0.301	0.298	0.284	0.329	0.329	0.309

Source: Statistics Netherlands; Social Statistical Database (SSD); authors’ processing and analysis.

Table 3.4 Dissimilarity Index for selected income quintiles, at regional level; disposable household income per neighbourhood, 2004–2011

<i>D-Quintiles</i>	2004	2008	2011
1–2	0.151	0.151	0.137
1–3	0.229	0.231	0.205
1–4	0.294	0.290	0.263
1–5	0.379	0.365	0.333
2–1	0.151	0.151	0.137
2–3	0.095	0.097	0.088
2–4	0.172	0.174	0.164
2–5	0.307	0.308	0.293
5–1	0.379	0.365	0.333
5–2	0.307	0.308	0.293
5–3	0.244	0.248	0.241
5–4	0.181	0.185	0.176

Source: Statistics Netherlands; Social Statistical Database (SSD); authors' processing and analysis.

dropping. The post-crisis postponement of residential migration clearly seems to have had a desegregation effect.

Such an effect of the crisis is also clearly noticeable when we focus in some greater detail at the dissimilarity levels between income quintiles for each of the three years (Table 3.4). Segregation of the first quintile category, relative to each of the other quintiles, is generally stable or in a downward direction before the crisis and then further down during the crisis. For the second quintile the pre-post crisis trend is stable, then down. For the fifth quintile we find that the rhythm is generally up, then down. These dynamics are shown for the regional level, but are similar for the municipal level.

Including the 'native–migrant' dimension

When the 'native–migrant' dimension is included in the analysis, a more complicated picture emerges, showing that there is not a one-to-one relation between income and the 'native–migrant' status. We confine the analysis to comparing the first income quintile and the fifth income quintile within and between 'native–migrant' categories, to allow for measuring effects of each dimension separately and jointly. Figure 3.2 provides the graphs for the various combinations of dissimilarities between sub-categories, for the region and the municipality.

In general, again a dampening effect of the crisis can be shown on levels of segregation. Highest levels of dissimilarity can be found for the most affluent natives relative to the migrant poor. The indexes are much higher than for the affluent natives relative to the native poor; and for the most affluent migrants relative to the native poor. Lowest levels of segregation can be found

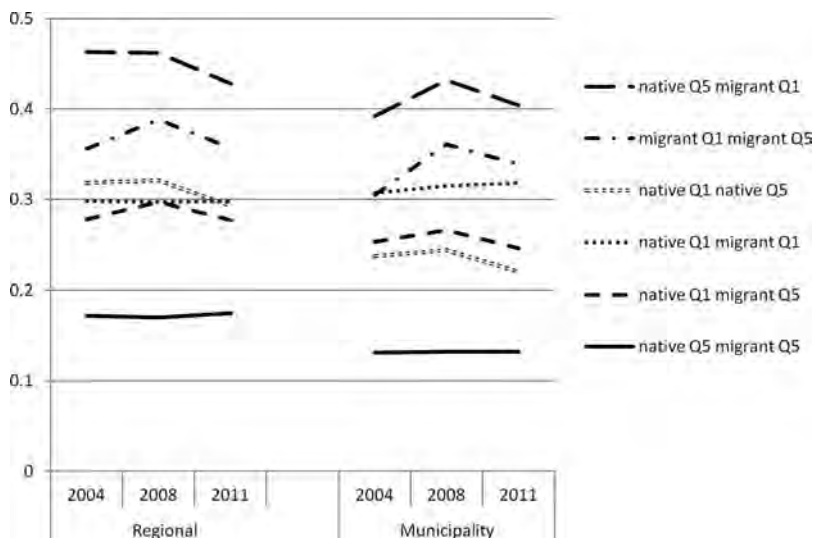


Figure 3.2 Dissimilarity Index for selected income quintiles (Q) for natives and migrants, at regional and municipal level; disposable household income per neighbourhood; 2004–2011.

Source: Statistics Netherlands; Social Statistical Database (SSD); authors' processing and analysis.

for affluent natives relative to affluent migrants. We also see an effect of the scale between regional and municipal. Whereas in the region the dissimilarity index for the first income quintile for natives and the first quintile for migrants is stable, we see a slight increase within the municipality of Amsterdam. In addition at regional level, D for the fifth-quintile natives and first- quintile migrants was stable and then going downwards before and during the crisis, while at municipal level the segregation between these two groups was first increasing and then going downwards before and during the crisis. The fact that the segregation between the first- and fifth-income quintile for migrant categories is much higher than between the first- and fifth-income quintile for natives seems to reflect the process which has been described by Wilson (1987) for the Chicago case: middle-class minorities were fleeing poor minority neighbourhoods, with – in the Chicago case – very negative effects on those who were left behind. Simultaneously, the middle-class migrants have been able to realise their housing ambitions.

The overall picture is that segregation in the municipality is generally a bit lower than at regional level, suggesting a stronger ‘melting pot’ at municipal level; however, just before the crisis started there was more often a tendency of increasing segregation at that level. This reflects the political changes whose social impacts seem to be more outspoken at municipal level than at the regional level.

Local patterns of three income categories, low-income migrants and high-income natives

The location quotients of low-, middle- and high-income categories are presented in Figures 3.3, 3.4 and 3.5. Relative to the share of low-income households in the metropolitan region, low-income households are still clearly overrepresented in much of the older parts of the core municipality of Amsterdam (the core of the metropolitan area) and in large sections of the post-war social housing-dominated neighbourhoods; with some exceptions they are vastly underrepresented in suburban areas (Figure 3.3). Middle-income households are overrepresented in suburban areas, and in large sections of the urban post-war neighbourhoods (Figure 3.4). The highest-income categories seem to have found their own ‘niches’ both in some of the older neighbourhoods in the inner city (including the Canal Belt) and some adjacent areas, and in specific suburban areas (Figure 3.5).

When income is (at individual level) combined with the ‘native–migrant’ dimension the patterns show a stronger contrast; these are almost ‘complementary’. Low-income migrants are overrepresented in specific post-war neighbourhoods and in some of the older nineteenth-century neighbourhoods of the core city, and in a few neighbourhoods in more peripheral locations (Figure 3.6). High-income natives are overrepresented in four areas of the core city: the Canal Belt (A in Figure 3.1); the relatively new Eastern Docklands (B) neighbourhoods; the older inner-urban eastern neighbourhood Watergraafsmeer (C); and the south-western wedge from the inner-city Canal Belt to the most important economic area (South Axis) (D). In addition, some specific peripheral and suburban neighbourhoods show strong overrepresentation (Figure 3.7).



Figure 3.3 Location quotients – low incomes, 2011.

Source: Statistics Netherlands; Social Statistical Database (SSD); authors’ processing and analysis.



Figure 3.4 Location quotients – middle incomes, 2011.

Source: Statistics Netherlands; Social Statistical Database (SSD); authors' processing and analysis.



Figure 3.5 Location quotients – high incomes, 2011.

Source: Statistics Netherlands; Social Statistical Database (SSD); authors' processing and analysis.



Figure 3.6 Location quotients – migrants with low incomes, 2011.

Source: Statistics Netherlands; Social Statistical Database (SSD); authors' processing and analysis.



Figure 3.7 Location quotients – natives with high incomes, 2011.

Source: Statistics Netherlands; Social Statistical Database (SSD); authors' processing and analysis.

Empirical section 2: questions 3 and 4

The analyses of levels of segregation show that especially those households with a strong socio-economic position tend to be most strongly segregated from other socio-economic categories. These divisions are becoming even stronger when other dimensions of difference are added, such as belonging to the native population or to one of the migrant categories. The highest levels of segregation can be found between the highest-income natives and the lowest-income migrants. Because the most affluent have most choice, this may be interpreted as a disaffiliation of those with the strongest position from ‘the other’. A key question is what this implies for ‘the other’. In this empirical section we will provide some answers to that question, following the two questions (3 and 4) we formulated before. The focus will be on the position and spatial concentration of the lowest-income household category within the municipality of Amsterdam: those with a so-called minimum income. In 2012 the municipality of Amsterdam registered 72,261 households with a minimum income. This was 16.6 per cent of all households.² In absolute figures their number was increasing again from 2009 onwards, after a period of decline between 2005 and 2009. It is important to know whether the recent development also implies that minimum income households became increasingly marginalised spatially.

To provide an answer to that question we investigated the development of the concentrations of households with a minimum income between 2004 and 2012. We were able to perform such an analysis at the six-digit postcode level. We defined concentrations in various ways: as a clear concentration, where the share of households with a minimum income in an area is at least two standard deviations above the share in the city as a whole; and as a strong concentration, at least three standard deviations above the city level. Areas that fulfil the criteria and are adjacent to each other were taken together, thus forming larger spatial concentrations. For more detail, see Deurloo and Musterd (1998). We only considered concentrations with at least ten households on minimum income and only areas of at least 4,500 m². In Table 3.5 some core findings have been presented. Between 2004 and 2012, even though the relative share of (registered) households on minimum income dropped somewhat, we see a strong increase in the share of households on minimum income that lived in clear concentration areas of their own group (from 24.3 per cent to 29 per cent). For 2012, a respectively *strong* concentration was defined as an area with at least 31 per cent, respectively 38.9 per cent households with a minimum income. To make sure the increasing share of minimum income households living in concentrations of minimum income households was not just a result of decreasing concentration boundaries, we also present 2012 figures with 2004 boundaries. Increasing concentration is confirmed. We thus conclude that households who are the poorest in the city are increasingly spatially marginalised and deemed to live in concentrations with similarly income-deprived neighbourhoods.

Can we develop a better understanding of the reasons why such concentrations are developing? To get the beginning of an answer to that question we constructed

Table 3.5 Share of minimum income households in Amsterdam and in concentration neighbourhoods

	<i>Share of minimum income households in Amsterdam</i>	<i>Share of minimum income households in concentrations (2 st dev)</i>	<i>Share of minimum income households In strong concentrations (3 st dev)</i>	<i>(Avg) share of minimum income households in concentrations (2 st dev)</i>	<i>(Avg) share of minimum income households in strong concentrations (3 st dev)</i>
2004	17.65%	24.3%	5.5%	39.0%	48.2%
2012	16.63%	29.0%	19.6%	39.3%	44.8%
2012*	16.63%	25.8%	15.0%	40.2%	46.3%

2012*, definitions 2004.

Source: Department of Research and Statistics, Municipality of Amsterdam; authors' processing and analysis.

a 'differences model' by performing an OLS regression analysis with the difference between the shares of households on minimum income per six-digit postcode in 2012 and 2004 as the dependent variable and a number of 'difference' variables for housing attributes as independent variables – these include real estate values of the dwellings and tenure information. The specification of a 'differences model' enables us to avoid potential spatial auto-correlation problems.³

Another issue is the assumption in OLS regression that the variability of the residuals is the same for all values of the dependent variable (homoscedasticity). While we expected a linear relationship between tenure change and social composition, preliminary analyses indicated a cubic trend. To avoid heteroscedasticity and to present an interpretable model, we recoded our change variables into categories, based on means, standard deviations and distribution (for example only one category for social housing increase despite a median and modus of zero percentage change). We only included postcodes in the analysis with at least twenty dwellings. Social housing, i.e. housing owned by social housing associations, decreased from 55 per cent in 2005 to 45 per cent in Amsterdam in 2012 (CBS 2014; van Gent 2013). From the descriptives (Table 3.6) we learn that only 5.2 per cent of the micro-neighbourhoods saw an increase in social housing.

The OLS model (Table 3.7) shows that housing-related factors are associated with the variation of the changing share of minimum income households. The model shows that decreases between 1 and 35 percentage points in social housing result in significant decreases in minimum income households compared to no change. An increase does not result in a significant increase in poor households however. This may be explained by the tendency of social housing associations during this period to build more expensive rental dwellings, some of which were not intended

Table 3.6 Descriptives of the variables used in the regression model presented in Table 3.7

		%	Average	Standard deviation
Change (difference 2012–2004) in minimum-income households (pp)			-0.24	9.1
Share social housing in 2004			17.08	21.84
Share owner occupancy 2004			6.65	12.27
Change in share of social housing in percentages points	Increase (≥ 1 pp)	5.2		
	No change (ref. cat.)	69.5		
	Decrease (≥ -5 and < -1)	5.9		
	Decrease (≥ -20 and < -5)	9.3		
	Decrease (≥ -35 and < -20)	5.8		
	Decrease (< -35)	4.3		
Change in share of owner-occupancy in percentages points	Increase (≥ 45)	2.1		
	Increase (≥ 30 and < 45)	5.8		
	Increase (≥ 15 and < 30)	14.4		
	Increase (≥ 1 and < 15)	21.8		
	No change (ref. cat.)	40.4		
	Decrease (≥ -15 and < -1)	13.5		
	Decrease (< -15)	2.0		
	Change in real estate tax value of all dwellings	Increase above 1 st. dev	15.2	
	Increase between mean and 1 st.dev. (ref.)	36.5		
	Decrease between mean and 1 st. dev below mean	40.3		
	Decrease more than 1 st. dev. below mean	8.0		

Source: Department of Research and Statistics, Municipality of Amsterdam; authors' processing and analysis.

for low-income households. As for ownership, we see that both an increase and decrease of owner-occupied dwellings result in a decrease in poor households. The negative effect of a decrease may seem odd but may be explained by the period after the start of the crisis when many owners would let their dwellings to cover expenses of a new dwelling. Because of this, the share of private rentals increased from 20 per cent to 27 per cent in the period 2005–2012 (CBS 2014; van Gent 2013). Finally, a strong increase in housing value also has a negative effect on the share of

Table 3.7 OLS regression analysis of the percentage point (pp) change in minimum-income households in six-digit postal code areas with at least 20 households and at least 20 dwellings in 2004 and 2012, without large additions or subtractions in housing stock (less than 20%), in Amsterdam, between 2004 and 2012.^a

		<i>B</i>	<i>Beta</i>	<i>Sign.</i>
Constant		2.074		0.00
Share of social housing in % in 2004		0.038	0.092	0.00
Share owner-occupancy in % in 2004		-0.016	-0.022	0.17
Change in share of social housing in percentage points	Increase (≥ 1 pp)	-0.711	-0.018	0.14
	No change (ref. cat.)			
	Decrease (≥ -5 pp and < -1 pp)	-0.896	-0.029	0.03
	Decrease (≥ -20 and < -5)	-2.555	-0.066	0.00
	Decrease (≥ -35 and < -20)	-4.745	-0.106	0.00
	Decrease (< -35)	-0.145	-0.004	0.77
Change in share of owner occupancy in percentage points	Increase (≥ 45)	-6.921	-0.109	0.00
	Increase (≥ 30 and < 45)	-6.528	-0.168	0.00
	Increase (≥ 15 and < 30)	-5.333	-0.207	0.00
	Increase (≥ 1 and < 15)	-3.290	-0.150	0.00
	No change (ref. cat.)			
	Decrease (≥ -15 and < -1)	-2.314	-0.087	0.00
	Decrease (< -15)	-1.977	-0.031	0.02
Change in real estate tax value of all dwellings	Increase above 1 st. dev	-1.161	-0.046	0.04
	Increase between mean and 1 st.dev. above mean (ref.)			
	Decrease between mean and 1 st. dev. below mean	0.221	0.012	0.38
	Decrease more than 1 st. dev. below mean	0.886	0.027	0.87
N = 6264, Adj. R Square = 0.128				

Source: Statistics Netherlands; Social Statistical Database (SSD); authors' processing and analysis.

Note:

^a The average population of the analysed neighbourhoods is 59.3 persons and 33.7 households in 2004. There are 17,772 six-digit postal codes. This means that the model covers 35.2% of all postal codes. Most were excluded because of size restrictions in both years and changes in housing stock, which is mostly due to renewal in the post-war periphery and new construction in IJburg and Osdorp. Missing data meant that 310 cases were excluded.

minimum-income households compared to moderate increases in value. Neighbourhood downgrading does not seem to have an effect. This points to the complex relationship between social change and real estate values (Teernstra and van Gent 2012). The model's only significant positive effect is the share of social housing in 2004. These findings imply that concentrations of poverty are mainly forming in areas with existing social housing stock.

Discussion and conclusions

Answering the first research question (Is there increasing socio-economic segregation?) we can say that in the metropolitan area of Amsterdam segregation levels of most income categories are still rather modest. The spatial distinction between the lowest-income quintile and the second or even third income quintile is limited. In fact, these income categories are still mainly part of the same urban system. This is likely due to a long tradition of a fairly equal income distribution in the Netherlands in general. However, there are signals and threats of increasing segregation, increasing division and separation of sections of society. Especially before the economic crisis started, some income categories, such as the highest incomes, developed more isolation and segregation. They already show high levels of segregation relative to the lowest-income categories, but there is also a tendency to disconnect from other income strata. When we combine 'social class' with 'country of origin', fairly high levels of segregation can be found, often increasing (before the crisis); especially natives in the highest income quintile are rather vigorously separated from the lowest income quintile migrants. Remarkably, the segregation between the first and fifth income quintile for migrant categories turned out to be much higher than between the first and fifth income quintile for natives. This is pointing at turbulent processes, also within the migrant population.

We also found that even though the core city is raising its social level, low-income households are still predominantly overrepresented there. At the same time, the core city is a 'hot spot' for a segment of affluent households. However, overrepresentations of affluent households are also present in several selected suburban municipalities. The centre of gravity for middle-income households is still typically suburban.

The answer to the second research question (Is there a difference between levels of segregation at different levels of scale?) is that segregation levels appear to be slightly lower in the core city of the metropolitan area. This suggests a stronger 'melting pot' function of the core city. However, before the crisis started, increasing segregation could be shown, especially in the core city area. We expect that after the crisis segregation in the core area will continue to increase.

The third research question (Are the lowest income households increasingly marginalised spatially?) must be answered in the affirmative as well: households with a minimum income are increasingly found in concentrations of households like themselves. We interpret this process, which will ultimately show as increasing segregation and marginalisation of the poor, as a consequence of the segregation of those who have the choice to segregate themselves from others, which are the middle and upper classes in society.

Answering the fourth research question (What are the housing-related factors that impact on the changing spatial pattern of low-income households in Amsterdam?) we found evidence that the existing stock of social housing is increasingly inhabited by the lowest (minimum-income) categories, and that the social housing distribution therefore increasingly predicts the spatial distribution of the poor. Less social housing and more expensive housing will negatively affect the share of minimum-income households.

The threats are that macro processes all point in the direction of growing inequality. Neo-liberalisation will stimulate inequality in society and thus also spatial inequality. Disaffiliation processes are therefore expected to continue. People may be misled by figures from the past half-decade, because this was a period of generally decreasing segregation. However, this is, as we have shown, very likely a consequence of the crisis. During economic crisis, residential mobility significantly drops. Economic uncertainty keeps people where they are, even if they are doing well. Also, financial and housing markets are hit hard by the crisis. New housing finance rules and residual mortgage debts have slowed demand and mobility. Meanwhile, low prices, increased taxation for housing associations and the credit crunch have slackened new housing construction and renovation. The general consequence is, as described in this chapter, a reduction of spatial inequality through larger social mix. However, this is likely just a temporary situation. The pre-crisis trends and processes are likely to be better predictors of what is to be expected than what we currently see.

The baseline seems to be the organisation of the welfare state. We are now in a phase of neo-liberalisation of state and market institutions that is inherently conducive to more (spatial) inequality, social polarisation, segregation, fragmentation and even cocooning behaviour. If such processes go so far as to reach disengagement and estrangement, then societies will be confronted with enormous costs to ensure individual safety and security. Experiences in the Americas and South Africa point to increasing budgetary and social burdens of ever-growing policing and penal policies. Additionally, when repressive policies fail, there is the risk of the development of states within the state. A debate on whether it would be more effective to turn the tide when this is still possible seems highly recommendable.

Notes

- 1 The region is including the municipality of Amsterdam.
- 2 The figures are minimum estimates, since these only refer to registered poverty, which appears to be underestimated; according to Statistics Netherlands, hidden poverty has increased during the research period.
- 3 In OLS regression models it is assumed that the outcomes that have been measured are independent from each other. In spatial analysis, however, the relative outcomes for the spatial units are often related to the distances between the units; there might be spatial auto-correlation. However, the distance between spatial units is constant over time and in our situation identical for 2004 and 2012. If we include the differences between these constant distances (which are all zero) as an independent variable that might impact on the difference between the shares of households on minimum income per postcode, the spatial auto-correlation problem does not apply.

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