1. Urban segregation: contexts, domains, dimensions and approaches
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1.1 INTRODUCTION

Collective outcomes of individual behaviour, whether driven by individuals themselves or by structural forces in wider global, economic and political settings, tend to produce certain levels of inequality, which in their turn impact certain types of spatial segregation. Although there would seem to be a general tendency for households to segregate themselves from one another based on a range of demographic, socioeconomic and cultural differences (Schelling, 1971; McPherson et al., 2001; Musterd et al., 2016; van Gent et al., 2019), this tendency also appears to be firmly affected by historical place-specific legacies in different contexts, as well as other contextual factors. In this regard, it is import to state that the relationship between households and their environment is mutual: households shape their environment, while environments trigger certain household behaviours.

Apart from the historically grown, place-specific context, the economic context and the prevailing political economy also impact (spatial) inequality in cities. The influence of historical, economic and political contexts is reflected most clearly in the activity or inactivity of various institutions that play a role in supply-side interventions. The (lack of) interventions may stimulate segregation, or possibly reduce it, depending on the legacies at play and the willingness to intervene, the kinds of interventions used, the urban economic past and present, and the type of welfare state in which the city is embedded. Such welfare regimes range from liberal conservative to so-called social democratic, with various types in between (Esping-Andersen, 1990; Musterd and Ostendorf, 1998; Burgers and Musterd, 2002; Arbaci, 2019). Finally, and related to the abovementioned factors, the general societal atmosphere as expressed in diverse discourses, the public climate, and the way in which 'problems' are framed in public debates – and by whom – are also likely to contribute to the development of inequality, dualism and segregation. This may be firmly embedded in democratic governance, but it might also be driven by discrimination, stigmatisation or other motives. All of these issues will be dealt with in this volume.

This volume consists of this Introduction (Chapter 1) and a concluding Epilogue (Chapter 24), with three parts in between. The first part focuses on the variety of segregation issues addressed worldwide; the second looks at the domains and dimensions of segregation that are manifest and discussed; the third part focuses on measuring and conceptualising segregation. The boundaries between these parts are not rigid but rather highly permeable, or even open, since many contributions pay attention to aspects of all the spheres that are central to the three parts. Nevertheless, this crude division helps us to address the wide variety of segregation in terms of *contexts, domains, dimensions and approaches* in a structured and comprehensive way.

The volume, and the three parts separately, will be introduced in sections 1.3, 1.4 and 1.5 below. In section 1.2, the attention will first, briefly, be directed to the concept of urban segregation and to the idea that the size of a city is related to segregation. In section 1.3, Part I will be introduced. This part illustrates the variety of key segregation debates that exists in cities across the globe. In a 'world tour', the reader will pass through all six continents, 16 countries, and a much larger number of cities, all of which are confronted with pressing segregation questions in a range of urban and institutional contexts. The fact that segregation issues could only be addressed in a few countries per continent obviously limits the scope of this handbook, but the wide variety of segregation scholars from cities around the world, and the fact there are contributions from cities from *all* continents, contributes significantly to the variation in terms of regional, ethnic, (socio) economic and regime contexts.

In section 1.4, Part II is introduced, which focuses on the domains and dimensions of segregation. In this part, it is shown that the residential domain still receives the most attention from segregation researchers, who address several dimensions such as age, family, race and class segregation. With the increasing tendency within urban development towards high-rise buildings, so-called 'vertical residential segregation' processes also require – and are receiving – attention. This does not imply that vertical segregation is new – in fact, it has a long history in cities such as Paris, and relatively more recently in Athens – but over the past decades this type of segregation has exploded through the expansion of major high-rise developments in cities across the globe. That said, there is also increasing interest in addressing segregation in other – non-residential – domains. In this volume, such other domains include public spaces, the field of education and the quality of the environment. Within these domains, specific demographic, socioeconomic and cultural forms of segregation will receive attention through the consideration of different categories of households. The aim is to address the most compelling segregation debates and also the gaps in the knowledge on segregation, in particular those related to demographic and cultural dimensions.

Section 1.5 introduces Part III, which looks at new issues regarding measuring, conceptualising and framing segregation. Place-based and individual-exposure-based measures of segregation will receive attention, as well as the potential impacts of the way in which segregation has been framed in political and public debates. Finally, in section 1.6, a short impression of the collective findings will be presented.

1.2   URBAN SEGREGATION

This volume focuses on *urban* segregation. Theories on the dynamics of urban life almost automatically seem to associate segregation with urban contexts – cities and suburbs in metropolitan areas – and less so with non-urban contexts – places of lower density, rural settlements and the like. This holds for classic human-ecology-inspired segregation theory (Park et al., [1925] 1974) that only addressed cities, as well as for studies rooted in behavioural theory in which individual perceptions and preferences about where to live in the city have been put forward (Brown and Moore, 1970), and for structural theory in which economic restructuring, social inequality and social polarisation have all been connected to dual or divided cities in the first place (Sassen, 1991; Fainstein et al., 1992; Hamnett,

1994). Finally, social and political theory in which the role of various institutions has been highlighted, as well as perspectives where the type of welfare state, and more specifically the role of local urban and housing policy, are regarded as having a major impact on segregation, have all predominantly focused on urban divisions (e.g. Forrest and Murie, 1988; Musterd and Ostendorf, 1998; Kazepov, 2005; Tammaru et al., 2016).

The association of urban spaces with segregation does appear to be legitimate, even if it is also rather pragmatic. We do have to take into account the fact that the North American and West European contexts in which the theory development on segregation has been most prevalent can be characterised as quite urbanised, as a consequence of the Industrial Revolution which drew people to the cities. Furthermore, these countries have been becoming steadily more urbanised, with the vast majority of the population living in metropolitan areas. Segregation or separation between categories of the population is most clearly visible in urban contexts. Segregated spaces in Chicago, the city where Burgess (1923) developed his urban social theory, were already large and specific and clearly noticeable a hundred years ago. While it is important to note that the segregation tendency might be a bit different in rural villages, especially in those places that function as one strong community, this does not rule out the segregation potential in such environments once meaningful difference has been developed; for example, when 'strangers' moving in 'disturb' the community, cleavages between 'insiders' and 'outsiders' will likely become manifest, as Elias and Scotson (1965) already showed more generally some time ago. In this volume, therefore, urban segregation is mostly used as a pragmatic concept, since the focus is on the urban, and most of the places dealt with are urban.

There is some debate about the impact of city *size* on the level of segregation. Until recently, a positive relation between size and segregation was assumed (see for example Jargowsky, 1996). However, this idea has been challenged. Critical voices claim that the studies advocating for the effect of city size were based on an analysis of difficult-to-compare neighbourhoods of various sizes, and on analyses in which researchers applied neighbourhoods that were simply too large (Krupka, 2007; Andersson et al., 2018). Krupka (2007, p. 195) concluded, for instance, on the basis of an analysis of 88 metropolitan areas in the US, that 'when data are gathered at the micro-neighbourhood level, there is no significant difference between large and small cities in terms of the homogeneity of [the city's] neighbourhoods'.

1.3   COVERING A WIDE ARRAY OF URBAN CONTEXTS ACROSS THE GLOBE

Segregation has been and remains a 'hot topic' in many cities. Yet what precisely receives attention in different cities, countries and continents is not the same everywhere. In Part I of this volume, several contributions are presented that represent the variety of orientations with regard to segregation and its connection to place-specific histories and other contextual attributes. These contributions cover cities in parts of Africa, Asia, Australia, Europe, North America and South America, and the cases referred to in these wider contexts reveal the place specificities and institutional contexts that come with them. On the one hand, this brings our attention to segregation experiences that may seem familiar. In comparison with other experiences, this will help us to detect the underlying forces that

drive segregation. On the other hand, and simultaneously, the authors show that beneath the surface of familiarity, new experiences of segregation are unfolding, and therefore new insights should be shared with others in order to arrive at better, more timely and more comprehensive views on current forms of segregation.

In this part of the volume, it can be read that there is ongoing racial segregation in many US cities, but also that there is fierce discussion about the direction of change. Some speak provocatively about 'the end of the segregated century' (Glaeser and Vigdor, 2012), while others, among them Jargowsky (Chapter 9 in this volume), position themselves in diametric opposition to this argument. Jargowsky offers evidence in support of his views, stressing the importance of taking into account the dynamic relation between racial and economic segregation. Racial segregation, he argues, should not be addressed without simultaneously giving attention to (socio)economic segregation. Interestingly, while analysing segregation connected to the case of São Paulo in Brazil, Marques and França (Chapter 3 in this volume) in fact argue the same, even though they begin from class segregation rather than race segregation. Class segregation has a long history in São Paulo. Yet as the authors point out, the increasing connection between class and race segregation, resulting in cumulative urban inequalities, sheds new light on segregation in this part of the world.

When confronted with segregation in yet another case, Cape Town in South Africa (van Rooyen and Lemanski, Chapter 2 in this volume), few people will be surprised that apartheid is still receiving attention. In this chapter, the authors go to some lengths to explore in a highly illuminating way the evolution of racial segregation. They show its persistent character, even after 1994 when Nelson Mandela's African National Congress (ANC) won the general election. A quarter of a century of democracy and the lifting of legalised apartheid has evidently not erased segregation. It is, once again, highly interesting that, as was shown in the case of US cities and for São Paulo, the authors who observe urban segregation in Cape Town also mark the connection between racial and socioeconomic segregation, and suggest that persistent segregation in the current era is connected to neoliberal urban governance, thus producing and perpetuating socioeconomic and racial forms of urban segregation. In short, and surprisingly, these three cases of segregation, although very different from one another in terms of historical developments and contextual settings, nevertheless show striking similarities in terms of the current relations between racial and socioeconomic segregation. More on this will be discussed in Chapter 24.

When looking at Australian and Chinese cities, the focus of attention is on internal changes regarding the type of welfare state in effect. Australia has seen a transformation from a regime characterised by social contracts and moderate social divisions in the first few post-war decades to an increasingly liberal-type regime in which competition, the market and deregulation are the key concepts. This transformation has induced increasing social inequality and growing social-spatial segregation (Randolph, Chapter 5 in this volume). In its advanced stage, an 'urban inversion' has occurred, with powerful gentrification becoming more dominant in the central parts of urban areas, while migrants and lower-class households can increasingly be found in suburban districts.

Market-oriented reforms of the welfare regime have also had a tremendous impact on the socio-spatial landscape in Chinese cities from the late 1970s onwards, with the beginning of open-door politics. Here, the spatial inequality debate is mainly focused on the

urban segregation of rural migrants. Li and Gou (Chapter 4 in this volume) investigate the effects on segregation of the huge number of rural migrants who have settled around the centres of large Chinese cities, attracted by employment opportunities in the fast-growing urban economies. But in addition to market forces, institutional factors have also played a significant role in shaping Chinese urban segregation. One particularly influential factor relates to an individual's *hukou* (household registration) status. Since a person's *hukou* is based on his/her place of birth, most rural migrants have a *rural hukou*. Such a status provides virtually no access to urban social housing and other urban services. Combined with limited property rights, this more or less forces rural migrants who want to work in the city to rent accommodation either in so-called urban villages – former rural villages that have been absorbed in the expansion of large cities – or in highly segregated worker enclaves.

The three European chapters in this part of the volume show the variety of segregation debates that feature highly on European political, public and academic agendas: the relation between residential and school segregation; migrants and segregation; and the segregation effects of regime change from state socialist to market driven. All of the chapters show the importance of the specific regional histories and contexts of interventions in this part of the world. Oberti (Chapter 8 in this volume) begins with the observation that in Paris, school catchment area policies have resulted in a strong correlation between residential and school segregation. This is not, however, a one-to-one relation; school segregation is higher than residential segregation. In addition to residential segregation, school policies, parental strategies and urban inequalities are also related to school segregation. Oberti shows that school segregation has effects on school achievement, but also on the overall perception of inequality and feelings of discrimination.

In Vienna, a different debate has received attention, as Kohlbacher and Reeger show (Chapter 6 in this volume). As in China, this debate is about the relation between migration and segregation, but here migrants come from other countries. Vienna's history is characterised by the influx of a large number of migrants from various origins: guest workers, migrants from Eastern European countries, and asylum seekers, most recently from the Middle East and Afghanistan. However, while in most European and other contexts liberal conservative agendas dominate the local and national politics regarding migration and segregation (as is also the case in other parts of Austria), in the city of Vienna an 'urban welfare policy' has continued to prevent increasing segregation. In the city, there is an historical legacy of strong intervention, most clearly visible in the housing market – Vienna still owns a substantial stock of communal housing – but also in other social domains. This shows that even in a context with a significant and diverse immigration experience, segregation levels can be controlled by local policy.

A third and very different European segregation experience is shown by Kovács (Chapter 7 in this volume), who discusses the transformation of Central and Eastern European countries from a state-socialist system characterised by egalitarianism, regulation, social mixing, centralised allocation and redistribution to a system ruled by market forces. Competition and global forces rapidly created growing social (wage and income) inequalities. This also triggered a reconfiguration of segregation patterns, but, logically, did not immediately create higher levels of segregation. After 1990, the better-off increasingly started to move to suburban locations, something that had not been allowed under the Communist regime; after 2000, others also started to move to inner-city neighbourhoods, where gentrification processes were ignited. Both places – the suburbs and the

inner cities – were formerly mainly inhabited by the lower classes. In the initial stages of such change processes, Kovács shows, small pockets of affluence and poverty tended to result, representing segregation at a micro level. At a slightly higher spatial level, however, such processes revealed limited or even reduced segregation. Nevertheless, following further increases in social inequality, and once the new housing market machineries started to operate in full swing, segregation levels did start to increase more broadly. This analysis once again shows that rigorous transformations may temporarily reduce spatial inequality, even while social inequality in society is rapidly increasing.

1.4   MULTIPLE DOMAINS AND DIMENSIONS OF SEGREGATION

The contributions to this volume offer a broad picture of what segregation is about. While in Part I an important aim is to show the variation among segregation debates and research between cities at a global level, in Part II the particular aim is to show and understand segregation in a range of domains, and with regard to various dimensions, aspects and household categories. As stated above, such domains and dimensions obviously also play a role in the chapters constituting Parts I and III, but the distinction is made here in order to focus on these two issues in particular. Here too, the studies that address the different domains and dimensions are not exhaustive, but instead illustrative of the wide range of spheres of life that can be studied in order to develop a more comprehensive and realistic view of the field of segregation.

Segregation is frequently addressed as a residential phenomenon. Most studies, in particular 'classic' studies rooted in the School of Human Ecology, have limited their analyses to the residential sphere (for an overview, see for example Berry and Horton, 1970; Robson, 1975). This is understandable, since place of residence is a domain where many people, especially children, the elderly and those with part-time jobs or without a job, spend most of their daily time. This domain therefore has a relatively big impact on the quality of life of individual households. This impact was particularly significant up until the mid-twentieth century, when the possibilities for personal mobility started to explode; yet residential segregation has in fact remained highly relevant until today. As a result, this domain has received the most attention – in practice and in research – as is also illustrated by the majority of the contributions to this volume. Therefore, this section begins by introducing three sets of chapters that pay attention to residential segregation (1.4.1). This is followed by a short introduction of segregation in other domains (1.4.2).

At this point, the wide array of dimensions that segregation studies deal with has to be introduced as well. Three dimensions stand out in social urban studies: ethnicity, migrants and race; socioeconomic dimensions; and demographic dimensions. These dimensions cover segregation between black and white population categories, or between newer immigrant population groups and those that settled in a place, say, four or more generations ago; between categories of households, for instance affluent and poor; and between young and old, singles and family households. Race and class dimensions have generally received the most attention and are also addressed in several contributions here. But in this volume, other somewhat 'forgotten' dimensions, especially demographic categories, will also be scrutinised.

1.4.1   Residential Segregation: Demography, Class, Verticality

Demography
Part II consists of three chapters that deal with segregation in the residential domain, focusing on the demographic dimension, albeit often in combination with other dimensions. Boterman (Chapter 12 in this volume), in his study of the development of social segregation among children in Amsterdam between 2004 and 2016, points to the fact that social and ethnic inequalities are frequently reproduced throughout the life course, and that these inequalities are also highly spatialised: at different stages in the life course, households appear to live in the same areas. Boterman argues that this may be a sign of relative isolation. However, this applies more to people with a Moroccan or Turkish background than to people with a native Dutch background; for the latter, age segregation is more pronounced. Another important finding is that some of the social and ethnic inequalities in society are noteworthy only for some age groups. Over time, for instance, young and elderly people show decreasing segregation, while young adults show slight increases or stability.

Bråmå and Andersson (Chapter 13 in this volume) pay attention to age and family type, which they call the third dimension of segregation. They studied demographic segregation in the residential domain in Stockholm between 1990 and 2014, and try to explain the observed changes in age and family type patterns. The authors argue that the declining levels of segregation that they observed might be ascribed to the low building rates after 1990. Before 1990, building rates were very high due to the Million Homes Programme, a public housing programme that aimed to ensure that all citizens could have a home at a reasonable price; this led to a firm relation between residents' age and the built environment, and led to sorting not only on the basis of household type but also on the basis of age. In 2014, however, the relation between age and sorting appeared to be less clear.

Owens's contribution (Chapter 14 in this volume) reveals some parallels with the study of Boterman, but with a focus on the residential segregation of households with and without children. She looked at differences between neighbourhoods, between places, and between cities and suburbs in the 100 most populated metropolitan areas in the US, between 1990 and 2014 (the same period as observed by Bråmå and Andersson). While Owens registered a drop in segregation levels between the household types, she also investigated income segregation for the same household types and geographies, and here she found higher and increasing levels of segregation among households with children. Another very relevant finding is that high- and low-income households with children are increasingly separated across municipalities, especially between suburbs, but not between cities and suburbs.

Class
After a focus on the residential domain and the demographic dimension of segregation, the attention is turned to residential segregation by socioeconomic class, with a particular focus on the middle and upper classes. A better understanding of the behaviour and spatial orientations of these classes is crucial for understanding segregation in a broader sense. In Part II, several contributions deal with these classes (though class plays a major role in the other parts as well). Hanhörster and Weck (Chapter 15 in this volume) investigated the conditions that might affect social interactions between different social

groups. From earlier studies it is known that bringing diverse social groups together in mixed neighbourhoods does not automatically result in intensive interaction or networking. Blokland and van Eijk (2010), for example, have argued that 'living in the proximity of other income groups is in itself insufficient to overcome racial, ethnic and class divides in social networks' (p. 313) (see also Weck and Hanhörster, 2015). In this volume, however, Hanhörster and Weck take a more nuanced position. By analysing more or less institutionalised small-scale neighbourhood settings, they illustrate the important role that micro-publics play in routine encounters and resource transfers. Their contribution demonstrates that the close interaction between behavioural aspects and institutional contexts in neighbourhood-based settings deserves more research attention.

Préteceille and Cardoso (Chapter 16 in this volume) present a comparative study of socioeconomic segregation in Paris, São Paulo and Rio de Janeiro. In addition to asking for attention to be paid to key methodological issues in this research area (such as scale differences), they also investigated the social and spatial dynamics in the three cities, using a carefully designed professional class typology and a social-spatial typology. They observe a shift towards higher socio-spatial status in all of the social-spatial types they distinguished, but also some increasing polarisation. They confirm that in these three urban settings, the upper class segregates itself most from others; for São Paulo, this observation was also made by Marques and França in Chapter 3 of this volume. Differences between the three cities – more moderate segregation in Paris compared to São Paulo and Rio de Janeiro – are tentatively ascribed to higher levels of social inequality in Brazil, and stronger public policies and more public housing in Paris.

Atkinson and Ho (Chapter 17 in this volume) delve deep into the segregation practices of the very wealthy and notice that there are varying fractions of the wealthy. Some show very specific spatial orientations; others show similar orientations compared to other wealthy households; this results in competition with each other, as can be seen between the old and new elites in affluent inner-city neighbourhoods. Assets appear to be more important than income in this sphere. Atkinson and Ho discuss the (literature on the) potentially profound impact of the very wealthy on urban life, since even though this is just a small group, it nevertheless has the economic and political power to change the character of cities. The authors stress that segregation should be seen as a relational process, as the opportunities at the top immediately affect the lack of opportunities at the bottom.

Van Gent and Hochstenbach (Chapter 18 in this volume) also point to the relation between social classes when they address the complicated relationship between gentrification and segregation. They connect the activities and residential behaviour of the gentrifying urban middle class to the waning position of poorer sections of the population. As the authors observe, 'gentrification may contribute to, or mitigate, new patterns of segregation'. Investments in gentrification and regeneration in some neighbourhoods may go hand in hand with disinvestment elsewhere, which may result in a reorganisation of patterns of affluence and poverty, perhaps temporarily resulting in declining segregation, but ultimately driving new social-spatial segregation. The authors refer to the changing welfare regime to better understand these developments. More specifically, they point to the increasing inaccessibility of housing, the residualisation of social housing, and the loss of social housing in central neighbourhoods. For a while, this may run parallel to declining segregation, but it is likely to result in increasing segregation in the longer run (see also Hochstenbach, 2017).

Verticality

A final view on residential segregation also looks at socioeconomic segregation, though it zooms in particularly on the vertical dimension, namely in terms of the levels in high-rise buildings in which people live. Segregation has largely been approached as a spatial distinction at the horizontal level. However, there is also a history of vertical segregation in multi-storey housing, and more recently in high-rises, especially in Asia, parts of Africa and Latin America. Two chapters represent the vertical segregation literature.

Maloutas (Chapter 19 in this volume) discusses vertical segregation in Athens – where the affluent live on higher floors, and the working class on the lower floors – though he opens his exposé by briefly referring to the history of vertical segregation, especially in late nineteenth and early twentieth century Paris, where bourgeois households – as opposed to in Athens – occupied the lower floors, while servants and the lower classes occupied the upper floors. In Paris, this type of segregation vanished with increasing gentrification of the central parts of the city, but it was an important phase in the process of keeping elites in the city centre. Vertical segregation in Athens' inner city is much newer; it had its heyday in the 1950s, 60s and 70s in response to rapid population growth (Leontidou, 1990). But while it resulted in increasing segregation within a building, it had a seemingly smaller impact on the public space of the neighbourhoods within the inner city. Nevertheless, higher-class households used a variety of strategies to maintain their distinct class position. They selected private schools, used more expensive shopping facilities, avoided public transport and so on.

Vertical segregation in Athens resulted from housing quality differences among floors; the higher floors were preferred in terms of views, light, fresh air and reduced noise – factors that become more important as density increases. It therefore comes as no surprise that the same factors are mentioned by Forrest, Tong and Wang (Chapter 20 in this volume) when explaining price differentials in Hong Kong high-rises. These authors also refer to the importance of a view, and they discuss the 'social stratification of air' as an explanation for the price differences between floors. Upper floors are clearly the most expensive, even more so if they have good views. Based on a selection of three differently located high-rises, they show that there is vertical segregation, but also horizontal segregation. Central city locations are unequivocally the most expensive. Their empirical study, in which they distinguish between location in the city, height, views (position on each floor) and floor space, is revealing and among the first of its kind.

1.4.2   Segregation in Other Domains

The foregoing sub-sections have clarified that the residential domain is well represented in this volume. More recently, segregation in other domains of life, such as in public space (see Smith and Low, 2006; Madanipour, Chapter 10 in this volume), in the workplace (Blumen and Zamir, 2001; Strömgren et al., 2014), in transport (Wilson, 2011) and in education (see Butler and Hamnett, 2007; Boterman, 2013; Oberti, Chapter 8 in this volume), have also been gaining attention. With this expanding attention, segregation has also been increasingly studied from an individual perspective, in terms of an individual's exposure to or isolation from others in a specific domain. Segregation is, therefore, no longer only being studied from a single space and place point of view (Kwan, 2009).

An approach based on measuring an individual's exposure also allows for the elaboration of studies on the relationship between different domains. These include place of

residence, education, the workplace, transport and leisure, for example. Segregation studies from an individual perspective also make it easier to investigate the extent to which individual preferences affect social-spatial inequality, and the role of earlier-developed segregation after controlling for individual behaviour. Addressing segregation through exposure to others also implies that research is increasingly paying attention to people's daily time–space experiences (Kwan, 2013). These relative novelties open up, for example, the analysis of the relation between residential and school segregation. Recently, Boterman et al. (2019) created an overview; they come to interesting conclusions about this relationship, for example that the relation between school segregation and residential segregation is not only strong, but also that the two aspects seem to reinforce one another. This has, unexpectedly, even been observed in 'extreme' contexts such as the Netherlands, in which residential segregation is firmly regulated and school choice is supposedly 'free'. Both domains, residential and educational, and their social-spatial mechanisms, therefore seem to be key to understanding social and intergenerational reproduction processes.

Recent research on exposure to different domains of life has shown that, in general, segregation levels correlate across a wide range of domains and activity spaces. In a large longitudinal study, Boterman and Musterd (2016) found strong relations at the individual level between the residential, workplace and transport-mode domains. The authors speak about a 'cocooning life' of those involved. Once again, it is the better-off in particular who tend to segregate themselves from others in all of these domains. The more segregated a person lives, the higher the probability that this same person uses private transport to go to work and to access services, and the higher the chance that he/she will be found in a work environment that is also highly segregated. These findings were both built on and developed in support of other studies, such as those of Atkinson (2006) and Atkinson and Flint (2004), which have argued that the upper class tends to disaffiliate itself from other classes, not just in terms of place of residence but also in other domains of life.

In this volume, several contributions pay attention to other domains, often in relation to the residential domain. In this sub-section, two particular domains are highlighted: public space and the quality of the environment. Madanipour (Chapter 10 in this volume) addresses public spaces in connection to segregation and raises the question of whether public space can be a response to social segregation and exclusion. To find answers, he discusses the social and economic processes that lead to segregation, as well as spatial and political theories in response to segregation, both in connection with public space. These discussions clarify that the inclusive and even uniting function of public space – something that many politicians would hope for – has been steadily eroded by power imbalances: social, cultural, political, economic and historical. These days, fewer and fewer public spaces are really public, mainly because, as Madanipour observes, many public authorities see 'the public realm through the prism of the market'. This results in public space being viewed as an asset, and therefore being given over to private interests. As a result, urban development increasingly leads to exclusive spaces, which in turn deepens social segregation. Nevertheless, Madanipour expresses a glimmer of hope, and makes a plea for the creation of accessible 'non-commodified venues for social encounters, inclusive expressive presence, and active participation, . . . helping the different parts of society being in continuous interaction with each other'.

Cucca (Chapter 11 in this volume) connects socioeconomic power to environmental justice debates and relates environmental quality with social-spatial segregation. The most

deprived groups tend to be found near polluted areas, while the affluent concentrate in places of high environmental quality. Housing market dynamics in neoliberal contexts explain much of these divisions. As Cucca states, greening and urban sustainability strategies are 'first and foremost market-driven endeavours primarily catering for higher-income residents'. Prices go up when there is green space in the vicinity. This has also stimulated the use of greening in urban redevelopment and upgrading policies. The association between green space and social class may therefore also lead to increasing social-spatial segregation and exclusion.

1.5   MEASURING, CONCEPTUALISING AND FRAMING SEGREGATION

1.5.1   Measuring

The vast literature on the measurement of segregation illustrates its importance in the urban segregation discourse. The discussion of measures has received ample attention in more classic studies, for example those of Duncan and Duncan (1955) and Taeuber and Taeuber (1965), and has been well summarised by Massey and Denton (1988). These authors developed systems of measurement methods in which they distinguished between measures for (1) levels of unevenness: dissimilarity (D) and Gini indexes, and also entropy indexes such as the Theil index; (2) exposure: including the index of isolation (P*); and (3) concentration, centralisation and clustering. These fields express different aspects of segregation and have different meanings. Later studies and overviews have added to the debate about how to measure segregation, particularly how to take scale into account (see for example Wong, 1993; Reardon and O'Sullivan, 2004; Johnston et al., 2005; 2007; Deurloo and de Vos, 2008; Lee et al., 2008; Musterd, 2012). As has already been addressed in the preceding section, Kwan (2009; 2013), for instance, supports the measurement of exposure to others at the individual level, especially in order to study segregation in activity spaces. Li and Wang (2017) and Wang et al. (2012) have measured activity space segregation in terms of the correlation between the social characteristics of individuals and those of their daily activity spaces.

Here, in Part III, these debates will not be elaborated on in full; such an endeavour lies beyond the scope of this volume. Neither is the dependence of several measures of segregation on the size, form and location of the spatial unit used discussed, including the important Modifiable Areal Unit Problem (MAUP). Excellent exposés have already been developed elsewhere (Openshaw, 1984), while several alternatives have been suggested to overcome specific measurement problems (O'Sullivan and Wong, 2007; Wong, 2008; Malmberg et al., 2014). Instead, some issues that have not yet been discussed extensively, but which are deemed relevant for future research on urban segregation, will be highlighted. This includes the contributions to this volume by Bailey and by Östh and Türk.

Bailey (Chapter 21 in this volume) measures segregation through the demographic processes behind changing social-spatial structures. He decomposes changes in segregation at city and neighbourhood level by examining the underlying demographic flows. He also distinguishes between the external processes by which people are added or removed from the city population, and the internal processes that contribute to the rearrangement

of the population within the city. This implies that between two points in time when measuring a population, attention should be paid to (1) 'exit' processes: out-migration, death and 'ageing-out' (no longer being part of the selection); (2) 'entry' processes: in-migration, birth and 'ageing-in'; and (3) what happens to the population which is there at the start and end of the measurement and which experiences internal residential and social mobility. This approach is highly important for theories of urban change, since it focuses on processes and therefore highlights the dynamism of urban locations. The dynamics of people and places are key to understanding social-spatial change in neighbourhoods and cities.

In segregation research, geographers have frequently applied k-nearest neighbour approaches, for the creation of neighbourhoods for each individual separately, by counting the number of residents around the individual and by using certain distance zones around him/her (see for example Johnston et al., 2004; 2005). Östh developed and applied the EquiPop programme for this purpose (Östh, 2014; Östh et al., 2015). The contribution to this volume of Östh and Türk (Chapter 22) is an extension of this work. While in former approaches bespoke neighbourhoods grew radially until a certain k-value had been reached, the approach presented here accepts more irregular forms of neighbourhoods. It allows for user-defined networks to grow at different speeds in different locations, taking streets and other infrastructure into account. This results in much better estimates of residential segregation levels compared to when traditional methods are used.

1.5.2   Conceptualising and Framing Segregation

Segregation is a concept with rather negative connotations: it is more frequently framed as 'bad' than as 'good'. Social and ethnic segregation are expected to block opportunities and to create negative neighbourhood effects, since both are expected to reduce social mobility and limit life chances. Peach (1996) noticed that ethnic segregation in particular is seen as 'reducing social interaction between groups and individuals and leading to mistrust' (p. 379). He immediately adds, however, that not all segregation is bad. In fact, the way in which segregation has been presented above – as blocking life chances – represents a rather extreme form of segregation. It is important to be aware of the fact that such extremes are far from common, but rather based on exceptional conditions that only apply to a few contexts. The extremes are clearly associated with the concept of the 'black ghetto' in pre-war US cities, in which many African-Americans lived in highly concentrated neighbourhoods. Philpott (1978) observed that in Chicago in 1930, not less than 90 per cent of all blacks lived in the 'black ghetto', and that in the ghetto itself, over 80 per cent of the population was black. Peach (1996) has argued, however, that this extreme situation did not necessarily apply to other contexts or groups, even though ghetto development was erroneously suggested as occurring for other groups living in so-called 'ethnic enclaves'. Peach (2009) has stressed how important the distinction between the enclave and the ghetto is, and that the two should not be conflated.

Deurloo and Musterd (1998) support such a view, based on a detailed geo-analysis in Amsterdam in which they applied a variant of the Philpott approach to see how the largest groups of migrants were settled. They used a detailed geography and constructed concentration areas built onto adjacent six-digit postcode areas that fulfilled certain criteria. Among other groups, they did this for residents with a Surinamese background

(in 1998, this group made up almost 10 per cent of the Amsterdam population). The criteria used were as follows: concentrations had to be at least two standard deviations above the mean; they had to be at least 2.5 hectares in size; and at least 25 per cent of the population in the area should have a Surinamese background. They found that only 16 out of 617 concentration areas fulfilled all criteria, even though the criteria were moderate. Furthermore, a mere 14 per cent of the Surinamese population was living in these 16 concentration areas. The authors' conclusion was therefore that 'no ethnic ghettos have developed in Amsterdam. The highest concentrations are still moderate and only a modest share of all immigrants of a group can be found in the concentration areas' (p. 395). Finally, the level of concentration did not differ much between immigrant categories and was unrelated to skin colour.

Recently, a small update of the analysis was performed; this looked at the largest concentrations of people with a Surinamese background, using the criterion of at least 50 per cent Surinamese (which is still moderate compared to the urban US context). For both 1998 and 2018,[1] only two neighbourhoods could be found that fulfilled the criteria (with an average share of Surinamese of 54 per cent in 1998 and 52 per cent in 2018). The two 1998 neighbourhoods were, however, *different* from the two 2018 neighbourhoods. Furthermore, and most importantly, in both years less than 1 per cent of the Surinamese in Amsterdam were living in these concentrations.

In this volume, Walks (Chapter 23) makes a significant contribution to the debate on concentration and ghettoisation. He presents a very important analysis of and reflection on the use or misuse of the 'ghetto' concept and the way in which it has been recently used to frame 'problems' in order to legitimate the development of racist interventions. He begins by presenting a full history of the concept of the ghetto, including the black ghetto in the US and in the South African Apartheid regime, and the Jewish ghetto in recent European history. He then goes on to discuss current state policies in Denmark, where migrant concentrations have been framed using the ghetto concept and where legislation has been passed to 'fight' the development of parallel societies, with the aim of having 'No Ghettos in 2030'. Walks discusses the problems and dangers related to this framing and the related legislation, and points to the risk that these new policies might actually *create* parallel societies.

1.6   A SHORT IMPRESSION OF THE COLLECTIVE FINDINGS

What can be taken from the contributions in this volume? This question will be addressed more elaborately in the Epilogue (Chapter 24), where findings are formulated that may be included in theory formulation aimed at achieving a fuller understanding of urban segregation. Here, some of the main points are briefly addressed.

Apart from the observation that, globally, there is quite some variation in terms of urban segregation situations, some remarkable commonalities can also be found. This includes, for instance, the observation that urban segregation differs according to institutional context and between contexts that differ in their historical development. In particular, the problematic social situation of a large share of the black population in both the US and South Africa, and the very high levels of segregation that come with it, are revealing in this respect. Even though the conditions and histories in both contexts are

very different, the life chances of numerous blacks in both countries are enduringly poor. Perhaps just as revealing is the shared observation made in several large US cities, in Cape Town, and in several cities in South America such as São Paulo and Rio de Janeiro, that the relationship between race and class is gaining weight. The contributing authors argue that race conditions can no longer be understood without a knowledge of class position, and they also state that the relation between the two is strong. This is illustrative of the sustained situation of poverty that many blacks worldwide find themselves in.

This, in turn, relates to the frequently mentioned importance of the type of welfare regime that characterises a state. For several aspects of segregation, there is a clear association between the type of regime and the level of segregation that one can expect. Liberal welfare regimes tend to produce more inequality and higher levels of segregation. The fact that many authors have observed the rise of neoliberalisation, that is market economies with state regimes that actively facilitate market processes through deregulation and reregulation, implies that there is a development going on in the direction of more inequality and higher levels of segregation, both in horizontal and in vertical (high-rise) spaces.

Neoliberalisation and marketisation have also had an effect on public space. Much of the public sphere, being seen as a market good, has gradually become (semi-)privatised, which has clearly resulted in a net loss in terms of its public function.

In some of the contributions, reduced levels of segregation have been noticed when measured over a certain period. Such developments, however, should be interpreted through a dynamic perspective, and it should be considered that sometimes a much longer period of analysis is required. Drivers of change, such as increasing social inequality or structural change in the social-spatial make-up of metropolitan areas driven by gentrification and the suburbanisation of poverty, as well as other processes, may not immediately translate into increasing segregation, but come with a time lag.

There appears to be a strong tendency for households to opt for homogeneity in their residential environment. However, such a tendency also exists in other domains. No wonder then that segregation levels between domains appear to correlate to one another. This implies that people who live a segregated life in their residential situation also tend to live a segregated life in their workplace, in their leisure activities and even in their transport experiences. Higher and upper classes do not simply show the highest levels of segregation, but also the strongest relations between the domains. This has resulted in disaffiliation and has produced homogeneous gated communities; this trend is, in turn, also increasingly expanding to middle-class households.

Finally, the conceptualisation and framing of segregated conditions, and the use and misuse of concepts to legitimate urban interventions, appear to have become a major issue in urban development and urban policy. This too will be addressed more extensively in Chapter 24.

NOTE

1. An open access interactive monitor has been applied to construct the concentrations. That monitor has been built by Urban Geography of the University of Amsterdam and the Municipality of Amsterdam, https://regio-monitor.nl/.

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