Surveying the Fault Lines in Social Tectonics; Neighbourhood Boundaries in a Socially-mixed Renewal Area

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ABSTRACT

In recent decades, neighbourhood regeneration has often involved social mixing strategies, often through comprehensive renewal. By deconcentrating poverty and giving opportunities for social interaction, remaining residents are believed to benefit from middle-class presence. This study looks at a post-war neighbourhood in Amsterdam which has undergone comprehensive renewal. By making use of survey data in combination with GIS techniques, this study shows that perceptions are structured by physical characteristics, activity patterns and symbolic boundaries. These perceptions are highly dependent on social position. While some residents in renewal areas display inclusionary attitudes, there is also evidence of middle-class and lower class disaffiliation. Interestingly, these translate into different mental maps for both groups. The paper ends with a methodological reflection on using GIS-based boundary drawing in neighbourhood surveys to gauge fragmentation and place-based displacement.

KEY WORDS: Social mix, GIS, Neighbourhood renewal, Social boundaries, Class, Selective belonging

Introduction

Since the 1990s, urban policies in the global north have focused on regenerating deprived neighbourhoods in order to tackle urban social issues. This was often done through the use of social mix strategies (see Goetz 2003; Gwyther 2009; Van Gent, Musterd, and Ostendorf 2009). These strategies typically involve accommodating more middle-income households by improving public space and restructuring the local housing supply, often through comprehensive urban renewal. Compared to demolished units, new housing units cater to more affluent residents, and are typically larger and more expensive, and of a private rather than a social tenure. Policy-makers emphasise that middle-class residents may function as role models, engage in community leadership and provide opportunities and social resources to
low-income residents. Conversely, an overrepresentation of poor residents is thought to produce (additional) negative effects and manageability problems (Andersson and Musterd 2005). Multiple studies have pointed to limited social benefits from social mixing (Galster 2007; Manley et al. 2013). More than merely ineffectual, renewal may even have negative consequences. Recent gentrification studies on social mixing emphasize the role of class difference and point to the issue of displacement (Bridge, Butler, and Lees 2012). Direct displacement of tenants after renewal has received considerable attention in Europe and North America (e.g. Clampet-Lundquist 2004; Posthumus and Lélévier 2013), yet regeneration with social mixing policies may also result in negative effects for those left behind. The changed built environment and the social differences between established, mostly lower class, residents and more affluent newcomers may result in residents no longer feeling “at home” in their neighbourhood. This is referred to as place-based displacement. Remaining lower class residents may feel estranged from the neighbourhood (Davidson and Lees 2005; Paton 2012). In addition, new residents may only selectively feel belonging in the neighbourhood, possibly leading to similar, yet different, processes of disaffiliation. Pinkster (2014), for instance, noted that new middle-class residents, regardless of type of housing, in vulnerable Dutch neighbourhoods tend to disaffiliate themselves from neighbourhood life (see also Kleinmans 2009; Watt 2009).

While several studies have indicated limited interaction and the symbolic boundaries that exist between established residents and newcomers in socially mixed neighbourhoods (e.g. Chaskin and Joseph 2013; Elias and Scotson 1965; Robson and Butler 2001), little is known about how these processes manifest themselves spatially. In other words, it is unknown whether social boundaries translate into shared perceptions of neighbourhood boundaries. Campbell and colleagues (2009) have shown that these perceptions are the outcome of an interplay between physical and institutional characteristics at the neighbourhood level, its social composition, as well as perceived threats and symbolic identities of individual residents. In this paper, we employ GIS techniques to chart how environmental characteristics and social positions interact in order to gauge how symbolic boundaries within a socially mixed renewed neighbourhood may become spatialized.

We will look at Geuzenveld, a post-war area on the periphery of Amsterdam, where, as part of a survey, residents were asked to draw the boundaries on a map of what they perceived to be their neighbourhood. Using this data and several survey questions on affiliation and attachment, we are able to combine background characteristics, housing attributes, attitudes and map perceptions. To be clear, as our research was conducted after renewal, this study cannot not be seen as an evaluation of changes. It is, however, a strategic case as the renewal has left different groups of residents visibly concentrated within the neighbourhood. As such, it gives insight into the perspectives of middle-class residents housed in renewed dwellings and of long-term residents who are more familiar with the area yet are confronted by new social groups in their neighbourhood. The main research question is: in what way do residents of various sections within the renewed neighbourhood Geuzenveld differ in terms of neighbourhood attitudes and perceptions of boundaries?

The remainder of this paper is structured as follows. The theoretical section will expand on perception of neighbourhood in socially mixed areas with a focus on class and ethnicity. Before explaining methods and data, we will focus our attention on the use of GIS techniques to investigate social boundaries. The empirical section will
present data on background characteristics, attitudes and maps for different sections of the neighbourhood. The discussion and conclusion sections will reflect on the findings, and the method used.

**Social Mix and Neighbourhood Perceptions**

Social mix policies are often enacted in anticipation of positive effects of middle-class presence on the original neighbourhood population and the mitigation of negative effects of the concentration of poverty. Much of the expected effects draw on the assumption that interaction between various social groups could establish a transfer of resources from rich to poor (middle class to lower class). Role modelling, neighbourhood efficacy, political mobilization and improvement of amenities are among the most commonly cited benefits in urban policy documents (Andersson and Musterd 2005). However, little evidence exists that different classes in socially mixed neighbourhoods interact meaningfully. Robson and Butler (2001) refer to this lack of interaction, despite proximity, as socially tectonic relationships: people move past each other without truly interacting (also Bacqué et al. 2011). This lack of social interaction has led some scholars to assert that state-led social mix strategies in peripheral low-income neighbourhoods are in fact manifestations of gentrification (see Bridge, Butler, and Lees 2012). Others have argued that, in these cases, gentrification would be stretching the concept too far (e.g. Lee 2013; Préteceille 2007; Van Criekingen and Decroly 2003). Furthermore, despite lack of interaction, the policies may still be considered positive for residents when other regeneration aims are achieved, such as improvement of amenities, or political voice. Yet, enforcing social mix is not just criticised for being ineffective, but in some circumstances could also be detrimental to social cohesion in the neighbourhood (Watt 2006). The spatial proximity and social distance may produce tensions between various social groups and may propagate processes of “othering” (Jackson and Butler 2015; Lamont and Molnár 2002; Van Eijk 2011).

In a range of studies of neighbourhood mix from various urban contexts demonstrate that processes of “othering” and the drawing of symbolic boundaries often occur at the intersections of a range of social categories. Class position and ethnic or racial categories are often conflated and are used interchangeably (see Bacqué et al. 2011; Boterman 2013). Furthermore, symbolic boundaries based on race, ethnicity or class may also be construed or exacerbated based on tenure and housing type. Different forms of tenure may be juxtaposed by residents (e.g. owners vs. tenants; social tenants vs. private tenants) (Atkinson 2015; Uitermark, Duyvendak, and Kleinhaps 2007). These juxtapositions are particularly relevant for social mix policies, as these may employ tenure restructuring to engineer class, or ethnic change (Van Gent, Musterd, and Ostendorf 2009). Yet, tenure is not the only attribute of housing which can factor in when boundaries are construed. The design of housing and public space may also help produce “classificatory schemes” (see Bourdieu 1989), which spatialize perceptions of difference. In other words, there are crucial intersections of social categories that are linked to places, leading to the construction and embodiment of mental maps.

**Mental Maps: Intersecting Symbolic and Physical Boundaries**

Mental maps, or cognitive maps, used to be a popular method in environmental psychology studies, particularly in studies on the relationship between neighbourhood
and local community (e.g. Evans 1980; Lynch 1960; Moore and Golledge 1976; Suttles 1972). Cognitive mapping is defined as a subset of more general processes of environmental cognition (Sundstrom 2003), which includes the impressions people have of their environment and the symbolic meaning and significance they ascribe to the environment (Moore and Golledge 1976). Mental maps are not so much representations of the physical world but are foremost representations of the social and symbolic meanings people ascribe to space (Sundstrom 2003). In many case studies, the concept of mental maps is invoked in relation to safety and fear of violence. American studies linked perceptions of space to cognitive strategies of safety. Suttles (1972) for instance argued that “cognitive maps provide a set of social categories for differentiating between those people with whom one can or cannot safely associate” (22). In his study of “defended neighbourhoods”, Suttles emphasised how cognitive maps are crucial for staying safe and creating order in the diverse physical and social landscape of the city.

Yet, mental maps are used more broadly than just in relation to safety and danger. Mental maps and perceptions of neighbourhood boundaries are defined by a combination of physical and demographic characteristics of the neighbourhood and symbolic identities of neighbourhood residents (Campbell et al. 2009; Coulton et al. 2001). As demonstrated by Campbell and colleagues (2009) residents define their neighbourhood by using physical cues such as roads, high-rise buildings or rivers in combination with perceptions of ethnic and class position of neighbourhood residents. What is more, perceptions are highly contingent on what the studies above refer to as symbolic neighbourhood identities. Cognitive constructions of which residents and which places belong to one’s neighbourhood are differentiated across social categories. Different social groups have different mental maps of neighbourhoods, on which some areas are included and other areas are excluded. Ethnicity and social class are often considered the most important factors that influence the neighbourhood perceptions of residents, but also length of residence and age have been identified as defining factors (Coulton, Jennings, and Chan 2013). These perceptions are also clearly linked to activity patterns, amenities, workplace commuting and social networks (Iossifova 2015). Gentrification studies for instance often demonstrate the role of specific consumption spaces such as coffee bars, restaurants and shops that may serve as psychological anchors in the perception of neighbourhood boundaries (e.g. Atkinson 2006; Jackson and Benson 2014; Watt 2009). In addition, the structure and design of the built environment may impinge upon how boundaries are drawn. Physical design can be conducive to conflict or social interaction between different residents in the context of mixed-tenure blocks (Chaskin and Joseph 2013; Lawton 2013; Tersteeg and Pinkster 2015). Also, newly built housing units may function as anchors, particularly when design features exclusionary elements, or communicates a specific class-related lifestyle (Atkinson 2015; Meier and Reijndorp 2012).

Class-variegating Neighbourhood Perceptions

Mental or cognitive maps reflect a physically and symbolically differentiated landscape. Moreover, the way boundaries are drawn intersects with social categories, notably with class. Yet, it is unclear how social boundaries of middle classes and lower classes are translated into boundaries and mental maps, particularly in the context of renewal aiming at social mix.
One of the most rich sources of our understanding of how social position shapes neighbourhood perceptions comes from gentrification literature (e.g. Jackson and Benson 2014). This literature primarily focuses on the experiences and everyday practices of new middle-class residents that enter into working-class or ethnically mixed areas. Whether middle classes move into new-build housing or existing dwellings within these areas, the point of view of these studies is long been from the eyes of the middle-class newcomers (Paton 2012). They demonstrate that middle-class inhabitants of gentrification and other socially mixed areas tend to dissociate from some elements of the neighbourhood while aspiring to others (Pinkster 2014; Savage, Bagnall, and Longhurst 2005; Watt 2009). Residents indicate that living in relatively poor areas is value for money, and they are very selective in their “belonging” to their neighbourhood. The concept of “selective belonging” mirrors that of disaffiliation. This refers to the processes by which higher class groups withdraw from socially mixed areas, by withdrawing from neighbourhood social life (“insulation”), or by retreating into more homogeneous areas (“incubation” and “incarceration”) (Atkinson 2006).

These studies suggest that middle-class newcomers, as a minority group in the neighbourhood, have different neighbourhood perceptions than the old residents. It is claimed that middle classes have a more narrow definition of what makes part of their neighbourhood. So, in the context of a urban renewal project that aims to alter the socially mix by “inserting” owner occupied housing, the expectation would be that newly arrived middle-class residents would define their neighbourhood just in terms of their own block, together with their fellow middle-class owners. Correspondingly, in these renewal areas, native and non-native working-class residents usually have a longer residential histories and tend to have wider local social networks. This greater familiarity with the area would translate into them defining their neighbourhood more extensively (Campbell et al. 2009).

Yet, these expectations may be countered by studies which find that higher educated and higher income individuals have higher levels of mobility. Consequently, they are less focused on their immediate surroundings and tend to define their everyday territory much broader than lower classes (Coulton, Jennings, and Chan 2013; Rejndorp and Reinders 2010). This suggests that in mental mapping, middle-class inhabitants define their neighbourhood broader and more inclusive than the old residents who are predominantly lower class.

Lastly, studies on place-based displacement in gentrifying or renewal areas suggest that lower class long-term residents might “hunker down” as a consequence of neighbourhood change. They may become culturally displaced in consumption spaces, suffer from the erosion of local social networks and more generally do feel less at ease or at home in the “own” neighbourhood (Atkinson 2015; Davidson and Lees 2005; Paton 2012, 2013). In this case, the expectation is that perceptions of lower class residents are structured and constrained by new structures and concentrations of newly arrived groups.

Data and Methods

The literature provides evidence for opposing hypotheses on how different social groups in a socially mixed renewed neighbourhood perceive their surroundings. It is unclear how symbolic boundaries manifest themselves in neighbourhood perceptions for different social groups in a socially mixed area.
This paper draws from a neighbourhood survey which was conducted in Geuzenveld, a typical case of a poor neighbourhood where urban renewal was used to alter the social mix and by accommodating higher income households. The survey, conducted in the first months of 2012, was part of a larger research project focused on the residential perceptions in five mixed neighbourhoods. Comparative analysis showed that respondents in Geuzenveld, the only renewed neighbourhood, were least in agreement in their neighbourhood perceptions, indicating fragmentation within the chosen research area (see Van Grondelle 2013). The fragmentation seems to be related to the existence of physically and socially different sub-areas within the research area (see below).

Adult respondents were approached based on a representative sample of the population, based on age categories, ethnicity, gender and housing tenure. After two postal invitations to complete the survey online, potential respondents were approached by phone and finally door-to-door. Due to low initial response rates, the face-to-face approach was employed extensively. Despite all efforts, non-Western immigrants are underrepresented in the survey sample. Single-person households and native residents are overrepresented (see Table 1).

Survey questions dealt with their residential trajectories, attitudes towards the neighbourhood and neighbours, general attitudes and background information. Before starting the survey, respondents were asked to draw what they “perceived to be their neighbourhood” on a map. The online survey featured a drawing tool based

| Table 1. | Survey sample compared to neighbourhood. |
|----------|-----------------------------------------|
|          | Geuzenveld | Respondents survey |
| Sex %    |            |                    |
| Woman    | 50.0       | 45.6               |
| Age %    |            |                    |
| 0–17     | 24.4       | 0.0                |
| 18–64    | 64.8       | 79.5               |
| 65+      | 10.8       | 20.5               |
| Households types % |          |                    |
| Single   | 18.4       | 25.1               |
| Couple without children | 18.0 | 28.7 |
| Couple with children | 48.1 | 29.8 |
| Single parent | 11.9 | 5.8 |
| Other/unknown | 3.6 | 10.5 |
| Ethnicity % |            |                    |
| Native Dutch | 27.9 | 47.4 |
| Western immigrants | 10.3 | 13.5 |
| Non-western immigrants | 61.1 | 38.6 |
| Tenure %* |            |                    |
| Owner-occupied/owner | 16.9 | 21.1 |
| Social rent/tenant | 62.9 | 53.2 |
| Private rent/tenant | 20.2 | 25.7 |
| Total     | 14020      | 171                |

*Share of tenure based on housing units on neighbourhood level and on individuals in survey.
on Google Maps technology. This tool was specifically designed and developed for this research project. To aid respondents, the online survey featured an extensive set of instructions and a video demonstration. In the face-to-face interviews, respondents drew on a printed map. The telephone respondents were asked to describe their neighbourhood boundaries. With a few exceptions, these description were too unclear to be included in the analyses.

Of the 106 maps drawn (out of 171 respondents), 84 were valid, meaning that respondents did include their own dwelling but did not draw only their own dwelling (unable to include due to privacy issues). Another 17 were of residents living in the northeastern and southwestern corners or in assisted living facilities. These few could neither constitute an area themselves nor be added to other areas. We were able to use 67 to analyse perceptions of clustered residents (see Table 2). Boundaries were analysed by constructing maps based on overlapping perceptions using ArcGIS software. Coulton and colleagues (2001) advocate the use of these overlay maps and

| Characterisation | Area A New mixed housing | Area B New high-rise | Area C Older multi-family | Area D Older single-family | Total |
|------------------|--------------------------|----------------------|--------------------------|--------------------------|-------|
| N                | 16                       | 22                   | 14                       | 15                       | 67    |
| Average age      | 38.1                     | 40.6                 | 41.6                     | 56.3                     | 43.8  |
| Length of residence at address | 3.6 | 2.6 | 7.9 | 18.3 | 7.5 |
| Length of residence in neighbourhood | 10.7 | 4.5 | 11.8 | 22.5 | 11.5 |

Household income

| Less than 1350 euro | 1 | 3 | 8 | 2 | 14 |
| 1351–2050 euro    | 1 | 0 | 3 | 6 | 10 |
| 2051–3200 euro   | 3 | 3 | 2 | 4 | 12 |
| Over 3201 euro   | 3 | 10 | 0 | 0 | 13 |
| No answer/unknown | 8 | 6 | 1 | 3 | 18 |

Ethnicity

| Native-Dutch | 4 | 13 | 2 | 11 | 30 |
| Western non-native | 3 | 5 | 3 | 1 | 12 |
| Non-western non-native | 9 | 3 | 9 | 3 | 24 |
| Unknown | 0 | 1 | 0 | 0 | 1 |

Tenure

| Owner-occupant | 6 | 0 | 0 | 4 | 10 |
| Tenant (Social) | 8 | 1 | 14 | 8 | 31 |
| Tenant (Private) | 2 | 21 | 0 | 3 | 26 |

Household composition

| Single person | 2 | 4 | 5 | 5 | 16 |
| Single parent family | 0 | 0 | 1 | 0 | 1 |
| Couple without children | 5 | 8 | 1 | 7 | 21 |
| Couple with children | 7 | 4 | 6 | 3 | 20 |
| Other/unknown | 2 | 6 | 1 | 0 | 9 |
argue that a 70% overlap constitutes a sufficient level of consensus. Accordingly, we will present overlay maps which accentuate the 70% mark.

Research Area

Geuzenveld, located on the municipal periphery, was built as part of a large Western extension, known as the Western Garden cities, in the 1950s. The extension had 40,000 dwellings in green surroundings following a modernist plan. Our study area is the northern part of Geuzenveld garden city, administratively designated as “Neighbourhood 9”, also known as Eendrachtsbuurt or Eendrachtsparkbuurt. It featured both multi-family and single-family housing designed by a small number of modernist architects, each responsible for a few blocks. The research area is delineated by canals and ditches, a park and the main traffic artery between Amsterdam and Haarlem.

Originally, Geuzenveld was built to house labourers working in nearby port facilities. Originally, nearly all units were social rental (95%). Early inhabitants mostly came from older working-class areas in Amsterdam. Over the years, much like most post-war extensions, Geuzenveld slowly declined in status and became one of the poorest neighbourhoods in Amsterdam (Teijmant and Sorgedrager 2009).

At this time, in the 1990s, urban regeneration in the Netherlands began focusing on post-war housing estates. Regeneration policy shifted from ensuring housing quality in pre-war areas to social issues and housing market decline. Large post-war areas, like the Western Garden cities, with relatively homogenous housing market structure, design and social composition, were seen as a undesirable as this would create negative social effects (see above). While issues were social, solutions relied on physical interventions such as tenure diversification and alterations to modernist urban design to allow for more collective efficacy (Van Gent, Musterd, and Ostendorf 2009; Van Kempen, Musterd, and Rowlands 2009).

In that vein, the first regeneration strategy for Eendrachtsbuurt in 1996 sought to diversify the local housing stock and improve the social mix by lowering the share of social rental dwellings to 45%. In 2001, it became part of the ambitious “Parkstad” regeneration programme for the whole post-war extension. Housing associations and municipality aimed to demolish one third of the areas housing stock to diversify living environments and halt social decline. The Eendrachtsbuurt regeneration would spearhead the programme and new construction on parkland started in 2002. A 2006 plan expanded the renewal by demolishing six multi-family blocks to further diversify the housing stock in terms of tenure and dwelling type, and further push densification. Demolition started in 2009. Eendrachtsbuurt turns out to be one of the few implemented projects of the Parkstad programme, as the financial and budget crises after 2008 forced housing associations and municipality to cancel it altogether (Prins 2011; Teijmant and Sorgedrager 2009).

At the time of data collection, the new housing on parkland had been completed and occupied for almost four years. These constitute the two new areas under investigation below. About 305 new dwellings were still being constructed in the research area which were scheduled to be inhabited the following year. In addition, the regeneration also involved the addition of care facilities, exterior renovations of older buildings as well as renewed public space. Also, one new supermarket was added to the area and two more further south.
Perceived Boundaries

Based on the historical development and physical structure, we chose four areas within the study area where sufficient number of respondents are clustered so neighbourhood perceptions and boundaries can be analysed aggregately. The areas are either newly built on parkland (area A and area B) or part of the original construction (area C and D). There is a difference in housing type for the latter category. One area consists of two-storey terraced housing (area C) and the other of four- and five-storey multi-family dwellings (area D). The new areas are exclusively multi-family housing (area B) or have mixed types of housing (area A). Figure 1 shows a map with areas outlined, alongside years of construction and location of amenities.

The variety in housing type and tenure is also reflected in the social characteristics. Table 2 shows for each area the characteristics of respondents for who we have a valid boundary map. Furthermore, to aid in the interpretation of the GIS analyses of perceived boundaries per area, we use several survey questions to gauge the level of affiliation, attachment and social contacts in Geuzenveld. Table 3 presents the reaction to several questions for all respondents in the area and for those included in the GIS analyses. The social characteristics and attitudes will be discussed together with maps drawn below. Both show marked differences in affiliation between different areas of Eendrachtsbuurt. The question is whether and how these varying levels of affiliation and disaffiliation translate into perceptions of boundaries.

Figure 1. Overview of neighbourhood with four areas. Amenities: S = Supermarket, Sh = Neighbourhood shops, F = Snack bar, E = Primary school, Bar = Neighbourhood bar, L = Launderette, C = Care facilities, assisted living, Tram = Tram terminus.
Sources: Own data and Basisregistratie Adressen en Gebouwen (BAG), Kadaster.
### Table 3. Percentage of respondents which agrees with statements in survey. Shares which are above sample average are shaded.

| Area          | Area A | Area A (GIS) | Area B | Area B (GIS) | Area C | Area C (GIS) | Area D | Area D (GIS) | Sample Geuzenveld |
|---------------|--------|--------------|--------|--------------|--------|--------------|--------|--------------|-------------------|
| **Attachment**|        |              |        |              |        |              |        |              |                   |
| Feels at home with people in the n’hood | 57.1  | 62.5         | 34.3   | 27.3         | 53.6   | 57.1         | 59.5   | 46.7         | 52.6              |
| Is attached to the n’hood              | 50    | 62.5         | 25     | 22.7         | 46.4   | 64.3         | 40.5   | 26.7         | 41.5              |
| **Social interaction**                 |        |              |        |              |        |              |        |              |                   |
| Finds it important to know who his/her neighbours are | 96.4  | 93.8         | 51.1   | 45.5         | 82.1   | 71.4         | 89.2   | 93.3         | 82.5              |
| Finds that people in the n’hood interact pleasantly | 60.7  | 68.8         | 40.6   | 36.4         | 60.7   | 50           | 62.2   | 66.7         | 57.3              |
| Has a lot of contact with n’hood residents | 64.3  | 75           | 28.1   | 22.7         | 53.6   | 50           | 48.6   | 60           | 47.4              |
| **Social mix**                          |        |              |        |              |        |              |        |              |                   |
| Finds the neighbourhood diverse in terms of residents | 78.6  | 75           | 71.9   | 72.7         | 53.6   | 50           | 70.3   | 93.3         | 70.8              |
| Is satisfied with the social composition of the n’hood | 60.7  | 68.8         | 43.8   | 40.9         | 42.9   | 50           | 32.4   | 20           | 45.6              |
| **Shame and lack of choice**            |        |              |        |              |        |              |        |              |                   |
| Is ashamed of the n’hood                | 3.6   | 6.2          | 9.4    | 13.6         | 10.7   | 0            | 13.5   | 13.3         | 9.9               |
| Feels trapped in the n’hood             | 0     | 0            | 12.5   | 9.1          | 7.1    | 7.1          | 5.4    | 13.3         | 5.8               |
| Number of respondents                   | 28    | 16           | 32     | 22           | 28     | 14           | 37     | 15           | 171               |
A: Newly Built Mixed Area

Area A (Figure 2(a)) is located in the centre of the research area and was constructed on parkland. Most respondents live in the southern part of the area, which explains the southern orientation and the exclusion of the northern part of the area.

Looking at income, ethnicity and tenure, area A is the most socially mixed area (Table 2). The newly built blocks also house some respondents who live in Geuzenveld for a longer period of time. Also, there are more couples with children. This area is perhaps a good example of what regeneration policy aims to accomplish: a mix different types of residents. Table 3 indicates that residents in area A have an open attitude towards their neighbours and on average are very much invested in the neighbourhood.

Apparently, the residents do not view all of the renewal area as their neighbourhood. Conversely, respondents do draw in the area’s new supermarkets and the tram terminus directly south of area A. This indicates the importance of daily routines in shopping and commuting to city centre or to train hubs nearby. Overall, the boundaries support the survey findings that the respondents have an inclusive view of what constitutes their neighbourhood. Boundaries do include older parts of Eendrachtsbuurt, particularly area C.

B: Newly Built Area with Mainly Middle-Class Residents

Compared to other areas, the respondents of area B stand out. They are mostly native-Dutch tenants in newly built private rental dwellings. Most respondents live in the “Parkrand” building, an eye-catching apartment building (see Picture 1) with...
**Figure 2a.** Neighbourhood perceptions in Area A.

**Figure 2b.** Neighbourhood perceptions in Area B.
Figure 2c. Neighbourhood perceptions in Area C.

Sources: Own data and Basisregistratie Adressen en Gebouwen (BAG), Kadaster.

Figure 2d. Neighbourhood perceptions in Area D.
comparatively expensive rental dwellings (>€ 665 per month in 2012). A few respondents live in the new building opposite to it. Indeed, area B respondents have higher incomes. This area can be designated as a middle-class area.

Respondents have a different view of the neighbourhood than those in area A (Figure 2(b)). As mentioned, these residents may be characterized as mostly middle class and even though they recently arrived in the area their attitudes indicate disaffiliation. Residents engage less with their neighbours and a few respondents even report feeling shame. They also tend to view the area’s social composition negatively.

Interestingly, their attitudes do not translate into small neighbourhoods. In terms of size they seem inclusive. Yet, in contrast to the residents in the other renewed area (A), most respondents in B only consider the new areas as part of their neighbourhood. In addition, they also draw the shopping centre and tram terminus to the south and the park which it borders. Older parts are not included, except a few blocks between the area and the supermarket. This is partly explained by their location on the edge and distance from older areas. Significantly, the adjacent older neighbourhood in the north-east corner of Eendrachtsbuurt is not included.

C: Post-war Area with Poor and Migrant Families

The only post-war high-rise area (area C, Figure 2(c)) in this analysis is centrally-located and west of most renewal areas. Area C has a large share of non-Western non-native respondents, low-income households and households with children. Almost all respondents live in social rental dwellings. This area is somewhat typical for the concentration of immigrant households (often families with children) in European post-war housing estates at the turn of the millennium (see Van Kempen, Musterd, and Rowlands 2009).

While the sense of neighbourhood is more restricted than in the renewed areas, respondents do indicate that they feel attached to their neighbourhood. The boundaries drawn result in smaller perceived neighbourhoods than the two new areas. Despite reliance on public transport, the tram terminus is not included. The resident do include the new discount supermarket (“Lidl”) directly west of their area. Also some residents include the school located in area A. Area B is drawn in by just a few respondents. Also, compared with area A, residents in area C are a little less inclined to include area A. For some, the new dwellings seem to form a physical demarcation (see Picture 2). More notable is the shared northern boundary. While respondents include a small area south of their location across a canal, they purposely do not draw in the older area to the north, which is area D.

D: Post-war Area with Ageing Working-Class Residents

Finally, the residents of the post-war area with small single-family housing display the most restrictive boundaries (area D, Figure 2(d)). They are, on average, older and have lived in the area for a longer period of time. Hence, the share of native-Dutch households is higher. There are a few owner-occupants but most residents are tenants. Because of the age structure, there are relatively few families with children. This area is typical for post-war neighbourhoods with many early residents with working-class backgrounds.
Picture 2. Area A (left) and area C (right). (photo by authors).

Picture 3. Area A (left) and area D (right). High rise at end of street is part of area C. (photo by authors).
In terms of attitudes, residents show an interesting combination of dissatisfaction over social composition yet high levels of social interaction. This implies that residents have strong, yet selective social networks within their neighbourhood. These attitudes result in a relatively small neighbourhood with the main roads as boundaries. This includes a small renovated part on the south side which includes new assisted-care housing and the discount supermarket. Interestingly, while they are not separated by a main road, the residents of area D only regard the new single-family dwellings across the street in area A as part of their neighbourhood, but not the rest of the area (see Picture 3). Also, they share a strong sense of boundary with residents of area C between their respective areas.

Main Findings

The preceding analyses show evidence, within the context of a mixed and renewed neighbourhood, of a relationship between disaffiliation and perceived boundaries. The literature review indicated several seemingly contradictory expectations with regard to class position and length of residence. It seems that the former is more important, yet this relationship seems to vary for social position of residents (notably class) and depends on type of neighbourhood and its specific dynamics (in this case renewal and social mixing).

The respondents in the two new areas have drawn considerably larger maps. The size of drawn maps cannot be explained by individual characteristics alone. Also, it is only weakly associated with levels of disaffiliation (data not presented). Indeed, respondents in both new areas draw large maps but display different attitudes and draw different boundaries. Yet, size matters as much as shape. In general, the presented maps indicate that spatially perceived boundaries are structured by location of the respondents, and by physical markers and barriers, such as parks, roads and building structures. Furthermore, daily routines such as shopping habits and commuting seem to play a role as well, particularly for middle-class residents in renewed areas. This also explains why residents of area A and B draw larger maps.

At the same time, drawn boundaries are also an expression of social relations and symbolic boundaries. Consequently, there are notable differences in what is included and excluded. As shown, middle-class residents in area B are less inclusive towards post-war areas than residents in the other renewed area. Likewise, respondents in other areas do not draw in area B despite the neighbourhood park “behind” the Parkrand building. We should note that demolition and construction were ongoing between areas A and B at the time of data collection. This did not seem to have affected neighbourhood perceptions for residents of those areas.

In addition to middle-class disaffiliation, we have also seen that respondents in both post-war areas draw strict boundaries around their immediate living environments. While respondents in area A are likely to include their neighbours in area C, some tenants in area C seem hesitant to include area A. More importantly, residents in area D almost do not include any of the other areas and display the strongest sense of borders. Survey questions show them having pleasant social interaction within the neighbourhood yet also show dissatisfaction with the area’s social composition and a lower attachment to the neighbourhood. These attitudes and restrictive perceptions may predate renewal. Yet, the strong sense of difference towards area A and area C today indicates a distance which can be a product of unfamiliarity with, or even hostility towards, the other areas’ new populations: middle-class and migrant
families. Furthermore, the strict boundaries drawn by area D residents are shared by other residents, which indicates a deep socio-spatial fault line.

**Discussion and Conclusion**

This study found considerable differences in perceptions of neighbourhood boundaries which can be explained by historically shaped social and physical subdivisions. While the survey reveals differences in attitudes and social interaction, the maps visualise the fault lines in the neighbourhood’s social tectonics (cf. Bacqué et al. 2011; Jackson and Butler 2015; Robson and Butler 2001). These lines reflect daily activity patterns, physical anchors as well as differences in class, ethnicity and the degree to which residents are established, i.e. length of residence. The study shows evidence of shared boundaries as well as overlapping mental maps. Further qualitative and quantitative research is needed to understand the significance of these overlapping boundaries. They may be related to daily activity patterns and frequenting amenities. These everyday practices are not socially meaningless, as they may indicate “urban borderlands”, meaning spaces where different residents may meet, interact and conflict in everyday life (Iossifova 2015; cf. Tersteeg and Pinkster 2015).

Our analyses particularly give insight into how social positions and neighbourhood attitudes relate to what is collectively excluded in defining the “own neighbourhood”. Our survey and GIS findings confirm middle-class disaffiliation for the residents of the Parkrand building (area B), as was also found by Pinkster (2014). Despite their large maps, they draw distinctive boundaries, excluding post-war housing. In addition, most residents in other areas are also reluctant to include area B. Given the difficulties finding housing in Amsterdam, it seems that some of these residents were able to obtain a good monetary deal for their apartments but would much rather live in another neighbourhood. So, here the renewal resulted in a middle-class enclave within a poor neighbourhood, yet its borderlands extend well into Geuzenveld. However, the other new area (A) shows that renewal does not necessarily breed disaffiliated or exclusionary-minded residents. Its mixed tenure, the central position within the neighbourhood, and the share of long-term residents make it the most inclusive, most satisfied and least disaffiliated area. Nevertheless, while inclusive, the new areas of Geuzenveld are often not included by residents in older parts of the neighbourhood. While the lack of longitudinal data prevents us from asserting place-based displacement because of renewal, the situation now does indicate some dissatisfaction with the neighbourhood and a withdrawn definition of living environment.

These last findings correspond with urban research which finds that lower classes are struggling for a place of home in times of economic recession, welfare state retrenchment, housing market restructuring and cultural change (see Atkinson 2015; Duyvendak 2011; Van Gent, Jansen, and Smits 2014). Paton (2013) argues that in insecure times working-class residents form place-based attachments for both symbolic and practical reasons. The neighbourhood is both part of identity as well as a site for family support and social contacts. The neoliberalization of public housing threatens this “elective fixity”, i.e. control over place of residence (Paton 2013).

The method employed, supported by the survey, has been instrumental in visualising the tectonic neighbourhood. There are a few cautions with this method which we
feel obliged to point out. First, as mentioned, in terms of appraising renewal and displacement, this paper presents an *ex post* evaluation. Ideally, analysing changing neighbourhoods should involve a longitudinal approach. Future research in Geuzenveld could replicate this approach to see whether the impact of renewal effect wears off. Second, while GIS techniques involve considerable quantitative data manipulation and a large N, it is inherently a qualitative tool, comparable to having respondents draw mental maps (e.g. Lynch 1960; Reijndorp and Reinders 2010; Tersteeg and Pinkster 2015). Knowledge of local context and history is indispensable in interpreting what respondents include and leave out (Cole 2013). Third, even though the survey was filled in by 171 respondents, the GIS sample size is much smaller and had an overrepresentation of middle-class singles and native Dutch. When these groups represent the population of the areas, it is less of a problem, but it also points to the need to oversample specifically for the GIS analysis. While the study was conducted, it became clear that some groups found it difficult to draw the maps online, particularly the elderly. In addition to unfamiliarity with online drawing tools, GIS-based surveys should take into account that not everyone is literate in reading maps ("graphicacy" [Balchin 1976]), and may not be able to pinpoint familiar streets and buildings. In addition to unsuitability for telephone surveys, these factors have certainly contributed to the difference between all survey respondents and those with valid maps. Fourth, we should be aware that maps are not neutral (Crampton 2010). This is particularly relevant when third-party maps are used in research. We employed Google Maps overlays and drawing tool technologies. As such, we are bound by what Google corporation chooses to include and exclude from its maps. We have no reason to believe that this had had a major impact on our study and findings, but it is something to be aware of when designing similar research.

Notwithstanding these cautions, there are advantages to using this type of GIS techniques. First, as mentioned, the maps aid interpretation of other quantitative or qualitative data. Moreover, the method also establishes what “neighbourhood” is. Rather than lumping all respondents together because they all live in the same statistical or administrative area, this study was able to analyse Geuzenveld as a set of smaller neighbourhoods, corresponding to resident experiences. Second, the method can incorporate a larger number of respondents in single maps, which is not possible with narrative mental mapping methods. In doing so, the maps give a reliable general overview of where a neighbourhood’s fault lines lie, and an indication of where different urban dwellers may meet, interact and conflict (Iossifova 2015). As such, it is a powerful supportive tool in both quantitative and qualitative neighbourhood research.

To conclude, the renewed Geuzenveld shows fragmentation rather than social integration. Although some fault lines may predate the renewal, this study demonstrates that social and symbolic boundaries are spatialized and follow physical environment and amenities, dependent on class position. This implies that the amenities, architecture and urban design play a significant symbolic role in post-renewal neighbourhoods. When fragmentation is conducive to lack of social cohesion, reduced collective efficacy or even social isolation, policy-makers and planners should take this to heart. Also, when the goal is to integrate a neighbourhood socially, solutions should be considered which do not reinforce or construe symbolic boundaries and avoid linking housing design with tenure.
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Notes

1. Wording of this question (“define your neighbourhood” vs. “define the neighbourhood”) has proven to significantly influence results (Minnery et al. 2009). The former formulation was used to gauge individual neighbourhood perceptions.

2. In the online survey, the initial map centred on respondents’ dwelling and showed a map of 1.5 by 1 km. Respondents were able to move the map and zoom in and out by making use of Google Maps user interface and functionality. In face-to-face interviews, respondents could draw on one of two printed map: one map had the same initial scale as the online survey, and one map showed a larger area of 3 by 1.5 km.

3. Residents near the edge of the built environment on average draw smaller maps as they typically do not include broad roads, large bodies of water and any (vacant) land beyond.

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