

How Attitudes towards Immigrants Are Shaped by Residential Context: The Role of Neighbourhood Dynamics, Immigrant Visibility, and Areal Attachment

Sjoerdje van Heerden

Didier Ruedin

didier.ruedin@unine.ch

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**How attitudes towards immigrants are shaped by residential context:
The role of ethnic diversity dynamics and immigrant visibility.**

Sjoerdje C van Heerden

Swiss Forum for Migration and Population Studies, University of Neuchâtel,
Switzerland.

Didier Ruedin

Swiss Forum for Migration and Population Studies, University of Neuchâtel,
Switzerland; African Centre for Migration and Society, University of the Witwatersrand,
South Africa

Corresponding author:

Sjoerdje C van Heerden. Email: sjoerdje.vanheerden@unine.ch Phone: +31 6 415 426 74.

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Keywords

Attitudes towards immigrants, ethnic diversity, residential context, neighbourhood dynamics, immigrant visibility, defended neighbourhoods, panel data, the Netherlands

Introduction

Largely driven by economic demand, the proportion of immigrants in most Western European countries has greatly increased since the 1970s. Some regard the arrival of immigrants positively; others view it with suspicion. Several studies address the role of neighbourhood dynamics regarding the formation of anti-immigrant attitudes (e.g. Green et al., 1998; Hopkins, 2010; Hopkins, 2011; Newman, 2013). However, the literature currently falls short on longitudinal studies that systematically analyse how individual-level attitudes towards immigrants are shaped by changing residential contexts.

Here we examine individual-level attitudes towards immigrants using panel data. We focus on attitudes towards immigrants in the Netherlands between 2008 and 2014. During this period, the anti-immigrant party *Partij voor de Vrijheid* (PVV) enjoyed considerable electoral success, holding between 6 and 13 per cent of the seats in parliament. Although the fierce rhetoric of the PVV is considered unprecedented, mainstream politicians have started to place immigrants under increased scrutiny from the early 1990s onwards (Van Heerden et al., 2013).

We are particularly interested in the effect of proportional change in immigrant population. This follows the assumption that when communities undergo sudden or large demographic change, immigrants are more likely to be opposed locally (Hopkins 2010). The intuition is that in an area where there are few existing immigrants, the arrival of new immigrants has a large negative impact on attitudes. By contrast, in areas where there are already many immigrants, the arrival of additional immigrants does not affect attitudes much. This reasoning is known as the ‘defended neighbourhood hypothesis’ (Green et al., 1998; Hopkins, 2010; Hopkins, 2011), and in extended form as the ‘acculturating context hypothesis’ (Newman, 2013).

The strand of literature that comprises the defended neighbourhood hypothesis builds to a large extent on work in the US where typically black and white interracial relationships are analysed. Empirical results have been inconsistent. Some studies found support for ethnic threat assumptions, while others did not, or only under certain spatial, political, or economic conditions (e.g. Hopkins, 2010). We have constructed a new data set that includes detailed geo-spatial information and individual level attitudes over time (compare Savelkoul et al., 2011). The methodological advantage of dynamic data is that

it allows a better control of selection bias and unobserved heterogeneity than studies that rely on repeated cross-sections (Lancee and Schaffer, 2015).

We aim to advance theory in several ways. First, we deepen our understanding by adapting the defended neighbourhood hypothesis to a Western European context where neighbourhoods tend to be less segregated and where history and patterns of migration are different. Assuming that the nature and implications of ethnic diversity is highly historically contingent, associations observed within one context should not readily generalize to others (Sturgis et al., 2011). We further explore the assumption that attitudes reflect the composition of visible immigrants — Muslims, immigrants from former colonies, and asylum seekers — more than immigrants in general. In this respect, we differentiate between the four largest non-Western immigrant groups in the Netherlands (compare Helbling, 2014; Manevska and Achterberg, 2013).

Immigration to the Netherlands

In the early 1960s, the Netherlands experienced a large inflow of migrant workers from Morocco and Turkey. Initially this arrangement would lead to a temporary stay, but by the mid-1970s family reunification was introduced and many workers settled permanently. At the same time, the Netherlands experienced a large influx of Dutch nationals from the former colony of Suriname. Together with settlers from the Dutch Antilleans, the Moroccans, Turks, and Surinamese nowadays are the four largest groups of non-Western immigrants (Coenders et al., 2008; SCP, 2014).

Between 1972 and 2014 the number of non-Western immigrants grew from 200,000 to 2 million, around 12 per cent of the total population. In 2014, there were 1.6 million Western immigrants, around 9.5 per cent of the total population. 1.2 per cent of these Western immigrants came from the ‘new’ EU countries Poland, Bulgaria, and Romania. Western immigrants represent the strongest growth of immigration to the Netherlands over the past decade (SCP, 2014). In official Dutch statistics, immigrants are generally defined by the fact that at least one parent was born in a foreign country.

Most immigrants live in and around the four largest cities. In the past decades, the number of municipalities with a relative high share of immigrants has increased. Between 2000 and 2014 the share of postcodes with more than 25 per cent non-Western immigrant

population doubled to almost 6 per cent (see Table 1). Asylum seekers (mainly from Iran, Iraq, Somalia, Afghanistan, and more recently Syria) are more spread throughout the country. In 2014, the share of asylum seekers in most municipalities was below 0.5 per cent (SCP, 2014).

Insert Table 1 here

Residential context and anti-immigrant attitudes

When examining the relationship between ethnic diversity and attitudes towards immigrants, the overarching framework includes two opposing theories: the ethnic threat perspective, and contact theory. The former departs from the assumption that the presence of immigrants prompts hostility among natives (Blalock 1967), and the latter suggests that diverse locales foster intergroup contact, having a positive effect on relationships and attitudes (Allport, 1954). So far, results have been inconclusive for both strands of literature (see Pettigrew and Tropp, 2006; Kaufmann and Harris, 2015 for reviews). While long considered a well-established dichotomy in the field, more recent studies have combined the mechanisms of contact and threat to explain inter-ethnic relations. For example, Schlueter and Scheepers (2010) find that objective out-group size corresponds to perceived group threat, which relates positively to anti-immigrant attitudes. What is more, increased diversity facilitates inter-ethnic contact, which relates negatively to perceived group threat, and thus moderates the effect on anti-immigrant attitudes (also see Laurence, 2014; Pettigrew et al., 2010; Schlueter and Wagner, 2008).

More specific, the ethnic threat perspective suggests that competition over scarce resources — either material or cultural — reinforces in-group identification and strengthens out-group aversion. It departs from the assumption that humans have a general tendency to establish hierarchies and power differentials through classification, while existing networks easily feel threatened by newcomers. The existence of ethnic stereotypes illustrates that this basic need for group identification can also be related to ethnocentric group-favouritism (May, 2004; Elias, 1994). The main assumption is that when the out-group (ethnic minorities) becomes larger, the perceived threat among the in-group (natives) increases, although empirical findings suggest the relationship may be

curvilinear with a decreasing slope (Schneider, 2008; Semyonov et al., 2006).

The insider-outsider configuration is considered a universal mechanism that can take place at different levels, including the societal level, city level, and neighbourhood level (May, 2004; Elias, 1994). Contact however is arguably more likely to take place on lower geographic scales. Studies conducted at the lower level are more likely to find that diversity relates negatively to anti-immigrant attitudes, while studies conducted at the higher level are more likely to find the opposite (Kaufmann and Harris, 2015; also see Kaufmann and Goodwin 2016). Following the ethnic threat perspective, self-selection could account for the divergent findings between levels; natives who feel threatened by immigrants move out of the neighbourhood, but remain within the larger metropolitan area. However, based on a large-scale longitudinal data set geo-coded to low geographic levels, Kaufmann and Harris (2015) find only limited support for this assumption. Likewise, their findings cannot explain the relative strong anti-immigration attitudes in ethnically diverse units at higher geographic levels.

Feeling threatened by immigrants is only one of many factors shaping neighbourhood satisfaction, which affects residential mobility: The happier people are with their environment, the less likely they are to move. Permentier et al. (2011) distinguish between residents' satisfaction, and the perceived reputation of a neighbourhood. Reputation refers to how residents think other city residents see their neighbourhood and can be an important source of social status. The concept of perceived reputation is an important addition to that of neighbourhood satisfaction, as it is less subject to inward/outward selection mobility, and cognitive dissonance reduction, pointing to the tendency of people to think more positively about neighbourhoods they cannot move out of. Non-residents have less incentive to play down negative aspects and base their evaluation on more general indicators. Using Dutch survey data, Permentier et al. show that the ethnic composition of the neighbourhood and its (average) socio-economic status are the strongest determinants of neighbourhood reputation. These findings imply that residents are affected by how others perceive their neighbourhood, influencing their residential mobility behaviour.

Other recent studies also emphasize the relevance of the neighbourhood. Schaeffer (2013) finds a curvilinear relationship between the out-group size of immigrants and German

natives ascribing the responsibility for neighbourhood problems to ethnic minorities. Based on a survey among British adults, Kaufmann (2014) states that the threshold for ethnic diversity at local and national scale is closely intertwined: Many people envision an ideal nation based on their local contexts. Moreover, proponents of the ethnic threat perspective maintain that continuing superficial contact with immigrants might keep the perceived threat over material or cultural resources salient, rather than weaken it, as contact theory stipulates (Burgoon et al., 2012). Unsurprisingly then, Taylor (1998) posits that the proportion of immigrants should be modelled as closely to natives' daily experiences as possible (see also Schmidt-Catran and Spies, 2016).

Acknowledging that contact and threat mechanisms might operate in tandem, it remains important to examine how changing residential contexts affect individual level attitudes towards immigration. To look at diversifying contexts and not just diversity, we need dynamic data. While the literature falls short on longitudinal studies, there are some exceptions. Connecting German panel data to detailed neighbourhood-level data, Lancee and Schaeffer (2015) show that individuals who move to a more diverse neighbourhood are more likely to become concerned over migration, while those who move to an equally or less diverse neighbourhood do not change their attitudes. Focusing strictly on individuals who moved, the authors point out that relocating to a more diverse neighbourhood is not the same as residing in a neighbourhood that becomes more diverse, a situation in which the authors expect even stronger effects on people's attitudes.

Other panel studies relate ethnic diversity to social cohesion (Laurence and Bentley, 2016), social capital (Levels et al., 2015), and support for welfare provision (Schmidt-Catran and Spies, 2016). Findings suggest that ethnic diversity negatively impacts community attitudes among stayers and movers at lower geographical scales, while prior in/out-group preferences condition this impact (Laurence and Bentley, 2016). Diversity has a negative effect on political participation, but not on trust and informal network activities (Levels et al., 2015). Furthermore, increased presence of foreign-born nationals in Germany relates negatively to natives' support for welfare provision. This effect is strongest in the early phase of immigration and also increases with higher unemployment rates (Schmidt-Catran and Spies, 2016).

A limitation to the existing studies is the rather large time span between the examined waves (4 to 10 years), opening the possibility that those affected by increased diversity moved out of the area before being re-surveyed, or that attitudes have recovered in the meantime. Also, Levels et al. (2015) and Schmidt-Catran and Spies (2016) measure ethnic diversity at the regional level by means of a general indicator, making it impossible to differentiate between groups or to examine the effect at the neighbourhood level.

Hence, we assume that increased immigrant presence in the neighbourhood relates to increased anti-immigrant attitudes among natives. We do not rule out contact, but argue that both mechanisms operate differently; the threat perspective is predominantly about changes, and contact pertains to what happens later in a context with changed diversity. We specifically focus on the neighbourhood's ethnic composition over time, taking into account that people tend to react more strongly to recent changes in their environment than to actual levels (Schmidt-Catran and Spies, 2016; also see Laurence and Bentley 2016). In this respect, we look at the proportional change in ethnic composition over the years.

H1: The larger the change in proportion of immigrant residents, the more likely individuals are to express anti-immigrant attitudes.

For individuals to respond to changes in the resident population, it is necessary that these changes are perceived. Like elsewhere in Europe, Western immigrants are generally less 'visible' in the Netherlands than non-Western immigrants, and may not be registered by local residents to the same extent as immigrants with different skin colour or with visible markers like dress or religious symbols. Immigrants with obvious 'Muslim' clothing stand out, as do people with a different skin colour. Statham and Tillie (2016: 178) argue that "in the last two decades Islam has become the key site or the demarcation of boundaries between majority populations and individuals of immigrant origin across Western Europe" (see also Coenders et al., 2008, compare Helbling, 2014; Manevska and Achterberg, 2013). Thus, perceived ethnic threat increases when the proportion of the immigrant group becomes larger, whereby non-Western immigrants are seen as the group

with the largest impact (Helbling, 2014; Schlueter et al., 2013; Semyonov et al., 2006; see also Van Klingeren et al., 2015).

H2: The larger the change in the proportion of visible immigrant residents, the more likely individuals are to express anti-immigrant attitudes.

Rather than focusing on the visibility of immigrants, the defended neighbourhood hypothesis emphasizes context. The intuition is that in an area where there are few existing immigrants, the arrival of new immigrants has a large negative impact on attitudes. By contrast, in areas where there are already many immigrants, the arrival of additional immigrants does not affect attitudes much. This means that the same change in proportion of immigrants can lead to quite different levels of opposition – depending on whether there were many immigrants in that neighbourhood beforehand (Green et al., 1998; Hopkins, 2010; Hopkins, 2011; also see Kaufmann, 2014). Newman (2013: 378) translates this hypothesis to the acculturation framework, defining acculturation as “large-scale socio-cultural change due to novel contact between culturally distinct groups”. People can experience ‘acculturative stress’ when their residential environment undergoes cultural change. The degree of stress relates to the degree to which the familiar sociocultural environment is displaced by unfamiliar language and culture. Like the defended neighbourhood hypothesis, the acculturating contexts hypothesis suggests that acculturative stress is more likely to manifest itself when ethnic homogeneity changes to moderate diversity, than when moderate diversity changes into to more ethnic diversity. Newman further highlights that acculturating contexts are directly linked to cultural threat perceptions, and therefore, indirectly linked to policy attitudes.¹

H3: Attitudes towards immigrants are expected to be more negative in areas where there is an increase in the change of immigrant population and this proportion is initially low.

Data and methodology

Panel analysis

Panel data are longitudinal data that represent multiple snapshots of the same individuals. The main advantage of panel data is that they allow a study of dynamics. Repeated measures give valuable insights into changes and transitions over time, making it more likely to identify causation (Longhi and Nandi, 2015). There are two major approaches to panel data analysis: random-effects (RE) and fixed-effects (FE). FE estimates explore the relationship between predictor and outcome variables within the individual. The assumption is that something within the individual may affect or bias the predictor or outcome variables and it is necessary to control for this. FE estimates study the causes of changes within a person, and by definition time invariant characteristics, such as sex, cannot cause such changes: They are constant, or fixed, for each person (Kohler and Kreuter, 2009). With RE estimates the variation across units of analysis is assumed to be random and uncorrelated with the predictor variables. Contrary to FE estimates, RE estimates can include time invariant variables, such as sex (Longhi and Nandi, 2015). A generally accepted way of choosing between the two estimates is the Hausman specification test, although some maintain its outcome is not indisputable (Bell and Jones, 2015).

Data: LISS panel

We draw on data collected by the *Longitudinal Internet Studies for the Social Sciences* (LISS) panel, administered by *CentERdata*. The panel started in 2007, and each month panel members complete a questionnaire for which they are paid. The LISS panel is based on a true probability sample of households, drawn randomly from the Dutch population register. Because the panel is online, households have been provided with a computer and Internet connection when necessary (Leenheer and Scherpenzeel, 2013). Revilla (2012) compared the quality of the *European Social Survey* (ESS) to that of the LISS panel data, amongst other by looking at measures of anti-immigrant attitudes. Having compared a LISS panel data sample from 2008 with population statistics, Revilla concludes that the unweighted sample data is suited to draw general conclusion about the population (see also Scherpenzeel and Das, 2010). Revilla further shows that the use of a web survey instead of face-to-face does not systematically impact quality. We have limited our analysis to respondents without a migration background, who participated in

all waves examined (2008–2014). Berning and Schlueter (2016) have tested a highly similar sample from the LISS panel (non-migrant respondents between 2008 and 2013) for systematic attrition by means of multinomial regression as well as multiple imputations, and conclude that the use of an all-wave sample leads to no different results.

Outcome variable: anti-immigrant attitudes

To construct our outcome variable of anti-immigrant attitudes we used this question: “For the following statement please indicate to what extent you agree or disagree” — “There are too many people of foreign origin in the Netherlands.” There are 5 response items: 1 = fully disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, and 5 = fully agree.² This 5-point Likert-type scale assesses the perception that immigrants and immigration carry negative consequences for the host society (see also Berning and Schlueter, 2016). While technically the scale item is ordered, the data are treated as interval since the underlying concept is continuous and the intervals between points are approximately equal (see Carifio and Perla, 2007; e.g. Berning and Schlueter, 2016; Gallegi and Pardos Prado, 2014). The data show acceptable skewness (-0.2) and kurtosis (2.5) values (Kline, 2011).

Predictor variables: Change in proportion of immigrants and controls

Our main predictor variable measures the change in proportion/share of immigrants living in Dutch neighbourhoods as demarcated by a four-digit postcode. Postcodes consist of six characters: four numbers, and two letters. The four numbers define around 4,000 neighbourhoods enclosed by ‘natural’ boundaries, such as roads, water, and features of urban development like large roads or parks. The two letters define specific streets in a neighbourhood. Data on the share of immigrants are only available on the level of four-digit postcodes. In our view, this is the level that matches the everyday perception of a neighbourhood most closely. The number of inhabitants per four-digit postcode can differ greatly. In highly urbanized areas a postcode can have more than 20,000 inhabitants — a specific ‘corner’ in a city —, while in rural areas this can be as low as 20 — a specific village or hamlet. In compliance with privacy rules, the four digit postcodes of the LISS-panel members were made available. Subsequently, for every year

under analysis, we used public data from the Dutch *Central Bureau for Statistics* (CBS) on the percentage of immigrants living in that particular neighbourhood. To capture the proportional change in ethnic composition, we have constructed variables that indicate the year on year increase/decrease in the proportion of immigrant groups, expressed in percentage (proportional) change. For example, if the proportion of non-Western immigrants was 10 per cent in 2008 and 12 per cent in 2009, a 20 per cent increase is observed between the two years. Given the time-demeaning nature of panel data analysis, this means that these variables essentially capture ‘changes in changes’.

We have included a series of control variables to account for alternative explanations for changes in attitudes towards immigrants. Age is measured in years, incrementing by one year. To account for non-linear effects of age, we also include age-squared. Level of (completed) education is measured using six categories ranging from primary school to university. Employment is a dummy variable, where 0 indicates the respondent is unemployed, and 1 that the respondent is employed. Income is measured by net monthly income, with a median income of 1,470 EUR. Home ownership is measured in three categories, whereby 1 indicates the respondent lives in a self-owned dwelling, 2 indicates that the respondent lives in a rental dwelling, and 3 that the respondent inhabits a cost-free dwelling, although this category proves very rare. Whether a household includes children is measured by a dummy variable where 0 = childless household, and 1 = household with children. For the variable ‘degree of social ties within the neighbourhood’ we use the following question: “How often do you do the following?” — “Spend an evening with someone from the neighbourhood”, with answers ranging from 1 ‘almost every day’ to 7 ‘never’.

Additional control variables are self-identification on a left—right scale, consumption of news, religiosity, and the degree of urbanization. Left—right self-identification is measured on a 10-point scale (0 = left-wing, and 10 = right-wing). Consumption of news is constructed based on the following question: “If a newspaper reports national news, for example about government issues, do you read that?” with answers ranging from 1 ‘seldom or never’ to 4 ‘almost always’. Religiosity is measured as a dummy variable, where 0 = not religious, and 1 = religious. The degree of urbanization is measured in five categories ranging from 1 ‘extremely urban’ to 5 ‘not urban’. For every model we also

include dummy variables for each wave (year) of the panel to account for time and relevant unobserved characteristics.

One last issue we deal with are households that move. A dummy variable is constructed whereby 0 indicates that household did not move that year or moved within the same postcode (4 digits), and 1 indicates that the household moved that year to a different neighbourhood with a lower share of immigrants, and 2 indicates that the household moved to a neighbourhood with a higher share of immigrants. This way changes in attitudes due to moving are partially controlled for, while changes in attitudes before moving are still taken into account. These earlier attitudes are considered important since they might have contributed to moving to a different neighbourhood.²

Results

In a first step, we examine the association between changes in the share/proportion of immigrants in a neighbourhood and attitudes towards immigrants.^{3 4 5} Table 2 presents the results of our first three models. Based on the Hausman test, we use FE estimations. The results of the first model (M1) show that increased change in the proportion of immigrants in the neighbourhood is associated with a *decrease* in anti-immigrant attitudes, opposite to our hypothesis that increased change in the proportion of immigrants in the neighbourhood leads to an increase in anti-immigrant attitudes.

Insert Table 2 here

Model M2 differentiates between Western and non-Western immigrants. An increase in the proportional change in non-Western immigrants in the neighbourhood yields a significant difference, while a change in the share of Western immigrants in the neighbourhood does not. As in model M1, the sign of the coefficient is opposite to what we expected: An increase in the change of non-Western immigrants is associated with more *positive* attitudes.

Model M3 takes into account five separate categories of non-Western immigrants showing that only Surinamese yield a significant difference: An increase in the proportional change of Surinamese leads to a decrease in anti-immigrant attitudes.

Generally with black skin, the Surinamese are immediately visible, which reduces the likelihood that perceptions of the number of Surinamese in the neighbourhood are vastly different from the actual numbers – something that could arguably affect less visible immigrant groups.⁶⁷

Defended Neighbourhoods?

We want to test the hypothesis that in an area where there are few existing immigrants, the arrival of new immigrants has a larger negative impact on attitudes, than in areas where there are already many immigrants. Table 3 shows how we expect interaction effects between the proportional change in the immigrant population and the share of native population to operate. We expect that a low share of native population moderates the effect of change in immigrant population. Put differently, where the interaction term is large (many natives = few immigrants, large increase in immigrant proportion), attitudes are predicted to be more negative. Hence, an increased change in the proportion of ethnic minority groups is expected to have a stronger effect on anti-immigration attitudes in neighbourhoods where the share of natives is initially low. We thus examine the interplay between proportional change (immigrant groups) and share (natives).

Insert Table 3 here

The models in Table 4 provide limited evidence for the defended neighbourhood hypothesis.⁷ Most interaction effects appear unimportant, while the other variables in the models are not substantially changed compared to the models presented in Table 2. While model M4 considers the proportional change of all immigrants residing in the neighbourhood, model M5 differentiates between Western and non-Western immigrants. Unlike the models in Table 2, the proportional change in non-Western immigrants does not significantly affect attitudes among natives. Model M6 differentiates specific nationalities among the non-Western immigrants. For most immigrant groups there is no evidence that the neighbourhood would be ‘defended’ against them, except for the Moroccan immigrant group. This result implies that residents of traditionally ‘native’ neighbourhoods display stronger anti-immigrant attitudes when Moroccan immigrants

move in, than residents of neighbourhoods that have been of mixed composition for a longer time.^{8,9}

Insert Table 4 here

Discussion and conclusion

We have examined individual-level attitudes towards immigrants using Dutch panel data. Our results provide limited support for the hypotheses drawn from the ethnic threat literature (e.g. Newman, 2013; Schlueter et al., 2013; Hopkins, 2010; Hopkins, 2011; Schneider, 2008; Semyonov et al., 2006). To the contrary, an increase in the change in proportion of immigrants in a neighbourhood is associated with more positive attitudes towards immigrants among natives. It is in particular the proportional change in non-Western immigrants that seems to affect attitudes, being the most visible immigrants. Although other markers might also play a role in threat perception (accent, shop signs, behaviour), this supports the idea that with ‘visibility’ natives are more aware that they are sharing the neighbourhood with immigrants.

While our study does not provide evidence for contact theory, the results are in line with it. This suggests we possibly pick up effects of intergroup contact, associated with more positive relationships and attitudes (Allport, 1954, Hewstone and Swart, 2011). Although we have included a variable that measures social ties in the neighbourhood, future research should study this alternative explanation more closely by including variables that specifically capture the nature (positive/negative) of interethnic contact as well as the type (e.g. neighbourhood, school, work, public transport).

A different explanation could be self-selection into more diverse neighbourhoods by individuals who have positive attitudes towards immigrants (Lancee and Sarrasin, 2015). While our models control for moving to another area with more or fewer immigrants, as well as generic political ideology (left—right positions) and with that in broad terms for different personality types (Gallego and Pardos-Prado, 2014), future research should address the issue of self-selection more directly. Individuals more open to change can be affected by changes in the neighbourhood in a different way, explaining why effects differ between those who move and those who stay (Laurence and Bentley, 2016).

Crucial here is to determine what *exactly* motivates people to move to different neighbourhoods (also see Van Ham and Manley, 2012). Unfortunately, our current methodological approach does not allow for such inferences.

Using interaction effects, we addressed the defended-neighbourhood hypothesis and the acculturating-contexts hypothesis (Green et al., 1998; Hopkins, 2010; Hopkins, 2011; Newman, 2013). Our results indicate there is limited evidence for defended neighbourhoods in the Netherlands at the beginning of the 21st century. Except for Moroccan immigrants, we find no evidence that in areas where there are few existing immigrants, the arrival of new immigrants has a large negative impact on attitudes. This single effect for Moroccan immigrants is not surprising. Over the past decades this group has been particularly contested in Dutch society (Azghari et al., 2015). There are debates about their strong orientation towards the Moroccan community, and alleged insufficient loyalty to Dutch culture. Also, the relative high crime rates among Moroccan-Dutch male youth are of concern (SCP, 2014). These numbers most likely damage the reputation of neighbourhoods that house a high number of Moroccan immigrants (compare Permentier et al., 2011). Also with respect to the defended neighbourhood hypothesis, the exact reasons to move house should be examined more closely. For example to rule out that those individuals most averse to immigrants will have already left the neighbourhood when it started to become diverse, accounting for the assumed weaker effects of diversity in areas that are already quite diverse, or that anti-immigrant attitudes simply reflect fears of declining neighbourhood reputation.

Based on our results, we do not dismiss defended neighbourhoods as a mechanism that shapes attitudes towards immigrants, but we suggest that it is not a universal mechanism. Perhaps defended neighbourhoods were more relevant at a time when attitudes towards immigrants were not systematically measured: in the 1970s, for example, when the share of immigrant workers increased substantially at the same time as many Dutch citizens from the former colonies moved to the country (Coenders et al., 2008). This is congruous with the theory of familiarization that suggests that getting used to immigrants over time can affect attitudes, even when one controls for intergroup contact (Schneider, 2008).

An important limitation of our study is that we have only one control variable for the community level (degree of urbanization). Ideally, future research should take into

account more neighbourhood characteristics (e.g. socio-economic composition, age structure, housing stock, crime rates, or the availability of amenities like playgrounds and grocery stores). Besides, our current research does not consider the possible effect of surrounding neighbourhoods, while it would also be interesting to test our hypotheses on multiple scales (see Kaufmann and Harris, 2015). We were also not able to control for possible boundary effects or spatial dynamics within the neighbourhood, or know for sure whether the administrative unit of the neighbourhood corresponds with the perception of the resident (see Legewie and Schaeffer, 2016; Van Ham and Manley, 2012). A further potential issue is the possible discrepancy between perceived threat and the actual presence of immigrants (e.g. see Hooghe and De Vroome, 2015).

Our findings raise the question how it is that higher shares of immigrants actually seem to weaken anti-immigrant attitudes, while anti-immigrant sentiment appears to be on the rise in the Netherlands. In this respect, we do not expect that attitudes towards immigrants are solely shaped by the presence of immigrants in the neighbourhood because there is a range of other factors that plausibly influence attitudes, such as the politicization and framing of immigrants in the media (Van der Brug et al., 2015; Van Klingeren et al., 2015).

For future research we also suggest to examine how ethnic diversity dynamics affect attitudes among immigrants. While it is more common to study both threat and contact mechanism from the natives' perspective, Havekes et al. (2014) show that both ethnic minorities and Dutch natives associate neighbourhood decline with negative attitudes towards ethnic minority groups, especially in neighbourhoods where many immigrants reside. Another aspect future research could take into account is 'social oldness'. It is expected that long-term exposure to the neighbourhood relates to a stronger identification with the area – something poorly measured with the variables available in the LISS panel –, which in turn will make individuals more susceptible to perceptions of ethnic threat (Elias, 1994; May, 2004).

In sum, by using longitudinal rather than the commonly used cross-sectional data, we presented relatively strong empirical evidence against the ethnic threat perspective at a neighbourhood level. Results provide indirect support for contact theory, not ruling out that threat and contact operate in tandem, or that threat and diversity have a curvilinear

relationship with a decreasing slope. While our findings might suggest that the defended neighbourhood hypothesis is obsolete, they provide an incentive to further examine how residential contexts foster tolerance, taking into account the perhaps more temporal dimension of threat. Such analyses seem especially urgent in a time where numerous Western European countries are faced with strong anti-immigrant sentiments.

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Notes

1. While we acknowledge this distinction, we contend that our outcome variable ‘attitudes towards immigrants’ relates to both policy attitudes and perceptions of cultural threat. See section on data and methodology for more details.
2. All predictor variables, except those concerning the (change in) share of immigrants/natives are derived from the LISS core studies or its panel background variables.
3. The LISS panel runs multiple ‘core studies’ throughout the year on various topics (e.g. politics and values, religion and ethnicity, family and household). As a consequence not all LISS variables are measured simultaneously. Also, for each core study, the data are collected over a certain period, often stretching a few months. The ethnic composition data indicate the situation on 1st January each year. To ensure that the measured change in ethnic composition always precedes the measured attitudes, we use the attitudinal data from the subsequent wave. For example, we measure the effect of changes in the immigrant population between January 2008 and December 2008 on anti-immigrant attitudes in 2009. The other LISS-derived variables (e.g. age, religion, income, education etc.) have not been adapted accordingly. However, alternative models show that when we shift the more time sensitive variables (e.g. left—right placement, news consumption, moved house, year effects etc.) results do not change substantially. We analyse 7 waves.
4. Calculated over the total person-year observations, the median of the ‘anti-immigrant attitudes’ variable is 3, and the mean is 3.34 with a standard deviation of 1.06. The ‘within respondent’ standard deviation is 0.54. A ‘within respondent’ standard deviation

of zero, would indicate that there is no variation within the respondent's records.

5. Calculated over the total person-year observations among stayers, the average year on year change in the share of immigrants is 43 per cent (64 per cent movers included), 15 per cent for Western immigrants (18 per cent movers included), 30 per cent for non-Western immigrants (49 per cent movers included), 16 per cent for Moroccan immigrants (23 per cent movers included), 14 per cent for Turkish immigrants (33 per cent movers included), minus 10 per cent for Antilleans immigrants (3.4 per cent movers included), 11 per cent for Surinamese immigrants (15 per cent movers included), and 13 per cent for other non-Western immigrants (14 per cent movers included). All 'within respondent' standard deviations for community change among stayers show variation over time.

6. Approximately 1,232 individuals are observed each year for M1 and M2, and 954 for M3.

7. When constructing home ownership as a dummy variable (1 = homeowner, 0 = no homeowner), and 'households with children' in a more refined way (0 = no kids, 1 = child, 2 = two children, 3 = three children, etc.) results remain similar.

8. Approximately 1,228 individuals are observed each year for M4 and M5, and 935 for M6.

9. Some effects are just below the 0.05 threshold, and we did not correct for multiple comparisons. All effects remained very similar across different model specifications.

10. While we follow the Hausman test for choosing between models, corresponding RE models reject all hypotheses.

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Table 1. Share of four-digit Dutch postcodes by percentage of non-Western immigrant population.

	0 to 5%	5 to 10 %	10 to 25%	25 to 50%	50 to 75%	≥75%	Total
2000	73.5	13.5	9.6	2.8	0.5	0.2	100%
2006	69.0	14.3	11.7	3.9	0.9	0.2	100%
2014	65.0	15.3	13.7	4.7	1.2	0.1	100%

Source: Sociaal Cultureel Planbureau (SCP), *Integration Report* 2014.

Very urban	-0.371	0.145	*	-0.372	0.145	**	-0.079	0.152
Moderately urban	-0.213	0.164		-0.214	0.164		-0.075	0.156
Slightly urban	-0.429	0.162	**	-0.428	0.162	**	-0.159	0.171
Not urban	-0.360	0.155	*	-0.359	0.155	*	-0.009	0.183
<i>Years</i>								
2008 (ref.)								
2009	-0.055	0.027	*	-0.055	0.027	*	-0.072	0.030 *
2010	-0.023	0.038		-0.023	0.038		-0.033	0.041
2011	0.002	0.051		0.002	0.051		-0.005	0.054
2012	-0.113	0.064		-0.113	0.064		-0.128	0.067
2013	-0.133	0.078		-0.133	0.078		-0.153	0.081
2014	-0.148	0.108		-0.148	0.108		-0.156	0.113
Constant	2.379	0.900	**	2.379	0.900	**	2.744	0.958 **
N (obs)	8630			8630			6679	

Notes: Outcome variable: negative attitudes towards immigrants. * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

Table 3. Capturing the defended neighbourhood hypothesis with an interaction term.

Share of natives in neighbourhood	Change in share of immigrants	Interaction Term
low	low	small
low	high	medium
high	low	medium
high	high	high

Table 4. Interaction effects between change in immigrant proportion and native share and attitudes towards immigrants, fixed-effect models.

	M4		M5		M6			
	Coef.	SE	Coef.	SE	Coef.	SE		
<i>Change in immigrant share in neighbourhood</i>								
Change in immigrant share	-0.087	0.111						
Native share	-0.003	0.006						
Change in immigrant share * native share	0.001	0.001						
Change in Western share			0.441	0.590				
Native share			-0.003	0.006				
Change in Western share * native share			-0.006	0.007				
Change in non-Western share			-0.174	0.147				
Native share			--	--				
Change in non-Western share * native share			0.002	0.002				
Change in Moroccan share					-0.319	0.168		
Native share					0.004	0.010		
Change in Moroccan share * native share					0.004	0.002	*	
Change in Turkish share					0.399	0.296		
Native share					--	--		
Change in Turkish share * native share					-0.005	0.003		
Change in Surinamese share					-0.263	0.296		
Native share					--	--		
Change in Surinamese share * native share					0.002	0.004		
Change in Antillean share					-0.132	0.323		
Native share					--	--		
Change in Antillean share * native share					0.002	0.004		
Change in other share					0.026	0.017		
Native share					--	--		
Change in other share * native share					0.000	0.000		
<i>Residency</i>								
Renting tenant (ref.)								
Homeowner	-0.159	0.069	*	-0.156	0.070	*	-0.126	0.087
Cost free living	-0.249	0.338		-0.245	0.337		--	--
<i>Household composition</i>								
No children (ref.)								
Children	0.008	0.047		0.010	0.047		-0.014	0.057
<i>Moving house</i>								
Not moved (ref.)								
To area with fewer immigrants	-0.133	0.097		-0.136	0.097		0.009	0.106
To area with more immigrants	-0.138	0.081		-0.144	0.081		0.028	0.109
<i>Contact</i>								
Almost daily (ref.)								
Once or twice a week	0.016	0.076		0.014	0.076		0.018	0.089
A few times per month	0.019	0.076		0.018	0.076		0.007	0.089
About once a month	-0.002	0.077		-0.004	0.077		-0.044	0.090
Number of times per year	0.014	0.076		0.012	0.076		-0.021	0.089
About once a year	0.020	0.079		0.018	0.079		-0.013	0.092
Never	-0.001	0.078		-0.003	0.078		-0.048	0.091
<i>Education</i>								
Primary/secondary (ref.)								
Junior high	-0.131	0.126		-0.132	0.126		-0.229	0.163
Senior high	-0.138	0.156		-0.139	0.156		-0.123	0.178
Junior college	-0.250	0.128	*	-0.250	0.128		-0.386	0.164
College	-0.069	0.144		-0.068	0.144		-0.055	0.170
University	-0.736	0.203	***	-0.734	0.203	***	-0.741	0.230
<i>Economic situation</i>								
Unemployed (ref.)								
Employed	-0.009	0.034		-0.009	0.034		-0.045	0.039
Net income	0.000	0.000		0.000	0.000		0.000	0.000

<i>News consumption</i>								
Seldom or never (ref)								
Occasionally	0.037	0.034		0.037	0.034		0.079	0.040
Often	0.031	0.038		0.030	0.038		0.068	0.045
Almost always	0.031	0.043		0.031	0.043		0.066	0.050
<i>Other individual-level controls</i>								
Age	0.049	0.020	*	0.049	0.020	*	0.037	0.022
Age ²	0.000	0.000	***	0.000	0.000	***	0.000	0.000
(Left-)Right	0.004	0.006		0.004	0.006		0.001	0.007
Not religious (ref)								
Religious	0.039	0.032		0.040	0.032		0.000	0.038
<i>Urbanization</i>								
Extremely urban (ref)								
Very urban	-0.401	0.151	**	-0.389	0.152	**	-0.207	0.175
Moderately urban	-0.231	0.172		-0.225	0.173		-0.178	0.187
Slightly urban	-0.422	0.171	*	-0.420	0.171	*	-0.143	0.200
Not urban	-0.341	0.169	*	-0.347	0.169	*	0.129	0.218
<i>Years</i>								
2008 (ref)								
2009	-0.058	0.027	*	-0.058	0.027	*	-0.086	0.030
2010	-0.025	0.038		-0.024	0.038		-0.043	0.041
2011	-0.002	0.051		-0.003	0.051		-0.029	0.054
2012	-0.116	0.064		-0.116	0.064		-0.150	0.067
2013	-0.138	0.078		-0.137	0.078		-0.181	0.081
2014	-0.155	0.109		-0.155	0.109		-0.189	0.112
Constant	2.578	1.023	*	2.540	1.025	*	2.248	1.233
N (obs)	8602			8602			6545	

Notes: Outcome variable: negative attitudes towards immigrants. * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$. When estimating multiple interaction effects with the same variable in one model, STATA only displays the variable's main effect with the first interaction. Interpretation however, remains similar.