



Joran Laméris

LIVING TOGETHER IN DIVERSITY

WHETHER, WHY AND WHERE ETHNIC DIVERSITY
AFFECTS SOCIAL COHESION

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LIVING TOGETHER IN DIVERSITY

WHETHER, WHY AND WHERE ETHNIC DIVERSITY AFFECTS SOCIAL COHESION

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Amsterdam, oktober 2017

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1

SYNTHESIS

1.1. Introduction

As a consequence of ongoing immigration in recent decades, the present-day Netherlands is characterized by substantial diversity in terms of people's ethnic background. More than one in five Dutch citizens comes from or has its roots outside of the Netherlands. Ten percent (9.8%) of the Dutch population has a western migrant background and twelve percent (12.3%) has a non-western migrant background (Statistics Netherlands, 2016a). The largest share of people with a non-western background originates from the (former) Dutch colonies, Surinam and the Dutch Antilles (500,000 people), and from the traditional labour-supplying countries, Turkey and Morocco (783,000 people). In recent years these four groups have only grown in size due to the birth of the second (and third) generation and not due to the arrival of new immigrants. This is not to say that the Netherlands stopped receiving immigrants. Since the entry of several eastern-European countries into the European Union in 2004 and 2007, the net migration of Poles, Romanians and Bulgarians has steadily increased. In 2014 more than 15,000 immigrants arrived from these countries. By way of comparison, a decade earlier in 2004 only 4,500 immigrants moved to the Netherlands from these eastern-European countries. Furthermore, due to the civil war in Syria and broader civil unrest in the Middle East, the Netherlands has hosted an increasing number of asylum seekers in recent years. The refugee crisis reached a peak in 2015 with more than 32,000 refugees from Syria, Afghanistan, Iraq and Eritrea alone applying for asylum (Statistics Netherlands, 2016b).

Within half a century, the Netherlands developed from a nearly mono-ethnic society to a multi-ethnic society that continuously changes and diversifies with the birth of second (and third) generation migrants as well as with the arrival of new immigrants. This increasing diversification in terms of ethnic background has triggered a heated political debate in the Netherlands, and in other western countries alike, about the possible threats that diversity poses to social cohesion (Wickes, Hipp, Zahnow and Mazerolle, 2013; Coenders, Lubbers, Scheepers and Verkuyten, 2008). Cohesive societies, in which citizens trust each other, meet and mingle and have a willingness to contribute to collective goods, are considered highly desirable by politicians and policy makers. Civic participation therefore also constitutes one of the main pillars for successful integration of newly arrived migrants (Ministry for Social Services and Employment, 2013). This is all not without reason, as research has shown that socially cohesive societies fare better economically and have healthier and more well-off citizens (Halpern, 2001; Putnam, 2000; Kawachi, 1999; but see Portes and Vickstrom 2011).

Concurrent with the heightened concern about ethnic diversity among public officials, many scholars interested in social cohesion rushed to examine the supposed negative impact of diversity on cohesion in the United States as well as in Europe

(e.g. Savelkoul, Gesthuizen and Scheepers, 2014; Fieldhouse and Cutts, 2010; Stolle, Soroka and Johnston, 2008; Letki, 2008; Putnam, 2007). Meta-analyses of the subsequent studies investigating the diversity-cohesion relation elucidated three consistent patterns. If a negative effect of ethnic diversity on social cohesion is found, it is more common in the United States than in Europe, it is more consistent for ethnic diversity within the local residential environment than for ethnic diversity within countries or regions, and it is more coherent for aspects of social cohesion that are spatially bound to the neighbourhood, such as trust in neighbours and favourable neighbourhood evaluations, than for other indicators of social cohesion (Schaeffer, 2014a; Van der Meer and Tolsma, 2014).

Notwithstanding the achieved progress made in recent years within the academic field studying the relationship between ethnic diversity and social cohesion, the aim of this thesis is to further improve the understanding of *whether*, *why* and *where* ethnic diversity erodes social cohesion. Social cohesion is in this thesis broadly defined as the ties between individuals that are both the result of, and cause for, the quality of public and civic life, feelings of commitment and trust, norms of reciprocity, and participation in networks and civic organizations (Chan, To and Chan, 2006). Ethnic diversity in the residential environment – the main explanatory factor – is characterized by relative ethnic group sizes. *Whether*, *why* and *where* ethnic diversity erodes social cohesion is in this thesis examined for the ethnic majority population in the Netherlands as well as in the United States.

Regarding the *whether*-question, I plan to bring the field forward by further scrutinizing the causal nature of the relationship between ethnic diversity and social cohesion. The vast majority of existing research is based on cross-sectional data, which has limited the findings to mere associations between diversity and cohesion (see for exceptions Laurence and Bentley, 2016; Levels, Scheepers, Huijts and Kraaykamp, 2015; Lancee and Schaeffer, 2015). On the basis of longitudinal data, I assess whether increases in diversity are related to decreases in cohesion. Even though the use of longitudinal data alleviates the problem of causality by enabling a more rigorous control for selection effects and the chronological order of supposed cause and effect (Rosenfeld, Quinet and Garcia, 2012), it cannot resolve the problem in its entirety. Experiments are a further step in the right direction, because of the random assignment of participants to treatment and control groups. Laboratory experiments have been used to investigate the diversity-cohesion relationship (e.g. Alexander and Christia, 2011; Koopmans and Rebers, 2009), but they carry the risk of lacking external validity (Gerber and Green, 2008). In the existing field experiments the external validity of the findings is enhanced, but ethnic diversity is in these studies not experimentally varied (e.g. Koopmans and Veit, 2014; Falk and Zehnder, 2013). I aim to complement these studies by exploiting as a natural experiment the establishment of asylum seeker centres in “as if” randomly assigned Dutch communities (Dunning,

2008; see also Williamson, 2014). This research design allows me to assess the causal nature of the diversity-cohesion relationship in even more depth.

With respect to the *why*-question, I contribute to the existing literature by testing both established and new theoretical mechanisms that explain the association between ethnic diversity and social cohesion. The few studies that empirically tested theoretical mechanisms focused on the contact mechanism (e.g. Pettigrew, 1998; Allport, 1954) and the threat mechanism (e.g. Bobo, 1988; Blalock, 1967). These mechanisms propose opposed effects of diversity on interethnic cohesion specifically. Whereas the contact mechanism predicts a positive relationship – more diversity, more (positive) interethnic contact, more interethnic cohesion –, the threat mechanism predicts a negative relationship – more diversity, more ethnic threat, less interethnic cohesion. In this thesis I expand knowledge by testing these explanatory pathways for the diversity-cohesion relationship from a longitudinal perspective. The anomie mechanism is in existing research offered as an additional explanation for a negative relationship between diversity and both interethnic and intra-ethnic cohesion: more diversity, more feelings of anomie, less overall cohesion (Van der Meer and Tolsma, 2014; Putnam, 2007). This theoretical explanation has to date not been put to empirical scrutiny (see for exception at the aggregate level: Delhey and Newton, 2005). I make a contribution to the field by empirically testing the anomie mechanism from both a cross-sectional and a longitudinal perspective. Furthermore, I examine a new and unexplored theoretical pathway linking ethnic diversity in the residential environment to social cohesion: individuals' perceptions of the residential environment. The presumption behind this mechanism is that the influence of the residential environment on people's behaviour and attitudes in general and social cohesion in particular stems from people's interaction with this environment and the subsequent perception they attach to it (e.g. Newman, Velez, Hartman and Bankert, 2015; Shinn and Toohey, 2003; Sampson, Morenoff and Gannon-Rowley, 2002; Chiricos, McEntire and Gertz, 2001).

Concerning the *where*-question, I plan to bring the field forward by addressing in which residential environment social cohesion is most strongly affected by ethnic diversity. Acknowledging that different aspects of the residential environment operate at different geographical scales and subsequently affect people's attitudes and behaviour at different scales (Sharkey and Faber, 2014; Logan, Zhang and Xu, 2010), I set out to uncover which geographical area is most relevant to study the diversity-cohesion relationship. The majority of previous studies perceived the relevant local environment as spatially bounded administrative units, such as census tracts. The conventional choice to focus on these administrative units is, however, mainly based on tradition and availability of secondary data rather than on theory or on any empirical justification (Van der Meer and Tolsma 2014; see for exceptions Tolsma and Van der Meer, 2017; Dinesen and Sønderskov, 2015; Sluiter, Tolsma and Scheepers,

2015). I perform pioneering work by empirically investigating how the relationship between ethnic diversity and social cohesion is affected by the scale and the type of boundary of the residential environment under study and by the ethnic composition of adjacent areas. Besides assessing ethnic diversity in previously used administrative units and egohoods of different sizes (cf. Hipp and Boessen, 2013), I am the first to explore ethnic diversity within egohoods where we restrict the used area to the administrative districts. This is a valuable extension of existing conceptualizations of the residential environment, because administrative units can have clear demarcation lines, such as roads and rivers.

The knowledge to answer the questions *whether*, *why*, and *where* ethnic diversity affects social cohesion is developed in five empirical studies. Chapter 2 through Chapter 6 cover the empirical studies. These chapters are written in the form of journal articles and are thus intended to be readable independently from each other. Some degree of overlap and repetition is therefore inevitable. This first chapter synthesizes the empirical studies. The sections of this chapter are organized as follows. Section 1.2 elaborates on the thesis's contributions and how they are embedded in previous research on the diversity-cohesion relationship. Section 1.3 discusses the data, the measures and the analytical strategies. Section 1.4 summarizes the aims, theoretical underpinnings and conclusions of each of the five empirical studies. Section 1.5 ends this chapter with a general conclusion and discussion.

1.2. Contributions embedded in previous research

1.2.1. The whether-question: the diversity-cohesion relationship

Social scientists have a long tradition in studying how the structural and social composition of the residential environment affect pro-social attitudes and behaviour of individuals (cf. Sharkey and Faber, 2014). In the wake of ongoing immigration to western countries, the focus has in recent decades turned to implications of (increasing) ethnic diversity in the residential environment for social cohesion.

In a widely cited article, Putnam (2007) claimed that ethnic diversity in U.S. communities eroded social cohesion both between and within ethnic groups. In what Putnam termed the 'constrict proposition', he stated that "...people living in ethnically diverse settings appear to 'hunker down' – that is, to pull in like a turtle" (Putnam, 2007:149). He showed that ethnic diversity in residential environments is negatively associated with a wide range of social cohesion indicators (such as trust, civic collaboration, altruism friendship). A recent direct replication of Putnam's study on the original dataset, however, shed doubt on the claimed generic negative consequences of diversity. Abascal and Baldassarri (2015) demonstrated that, in the

United States, once ethno-racial differences between individuals are accounted for, ethnic diversity, defined as the size of the ethnic out-group, is only negatively related to some indicators of cohesion, such as trust in neighbours, and that this only holds for the ethnic majority population (i.e. whites).

After the publication of Putnam's article in 2007, many researchers started investigating the diversity-cohesion relationship in the United States as well as in Europe (e.g. Savelkoul et al., 2014; Fieldhouse and Cutts, 2010; Stolle et al., 2008; Letki, 2008). Meta-analyses of the multitude of studies investigating the diversity-cohesion relationship pointed out, in line with the later conclusions of Abascal and Baldassarri (2015), that if a negative effect of ethnic diversity on social cohesion is found, it is more consistent for aspects of social cohesion that are spatially bound to the neighbourhood, such as trust in neighbours and favourable neighbourhood evaluations, than for other social cohesion indicators, such as generalized trust (Schaeffer, 2014a; Van der Meer and Tolsma, 2014; see also Portes and Vickstrom, 2011). Additionally, these studies uncovered that a negative association between ethnic diversity and social cohesion is more common in the United States than in European countries.

This current scholarly consensus on the impact of diversity on cohesion rests largely upon cross-sectional research – that is, people living in residential environments with varying degrees of ethnic diversity are compared at one point in time. This is problematic because of the selection bias plaguing neighbourhood research in general (e.g. Hedman and Van Ham, 2012; Sampson et al, 2002). This bias stems from the fact that individuals sort into or move out of certain communities according to their preferences and economic constraints. This could, for example, be problematic when certain sociodemographic groups are more likely to hold less cohesive attitudes and to reside in ethnically diverse neighbourhoods or when people who dislike ethnic diversity move out of ethnically diverse environments and into ethnically homogeneous environments. Whereas the selection bias in the first scenario could possibly be tackled in cross-sectional research by accounting for sociodemographic characteristics that are known to be related to both social cohesion and the tendency to live in particular residential environments, the selection bias in the latter scenario is harder to deal with in cross-sectional research.

First steps in overcoming this problem and in assessing the causal relationship between ethnic diversity and social cohesion more rigorously have already been made. To date, three studies examined the diversity-cohesion relationship from a longitudinal perspective (Laurence and Bentley, 2016; Levels et al., 2015; Lancee and Schaeffer, 2015). Notwithstanding that these studies have clearly expanded our knowledge by showing that increases in ethnic diversity are also related to decreases in some, but not all, indicators of social cohesion over time, there is still substantial room for further improvement. Levels et al. (2015) only considered ethnic diversity

and increases thereof within relatively large residential environments (i.e. *Kreise* in Germany). Lancee and Schaeffer (2015) did not examine the diversity effect of a changing residential environment, but the diversity effect of moving – either voluntarily or out of necessity – to a more ethnically diverse residential environment. Laurence and Bentley (2016) had to deal with a long time-span between the waves of data (i.e. 8-10 years).

In order to extend existing knowledge, I employ a hybrid panel design to simultaneously assess cross-sectional and longitudinal effects of diversity on two attitudinal indicators of social cohesion, trust in neighbours and generalized trust, in the Netherlands (Chapter 2). This allows me to compare my findings to the majority of existing research that is cross-sectional in nature and at the same time build upon the scarce longitudinal research. I observe changes in ethnic diversity over a relatively short period of time (+/- 4 years) within relatively small residential environments (i.e. districts or '*wijken*'), because the cross-sectional association between diversity and cohesion is found to be most consistent within these environments (Schaeffer, 2014a; Van der Meer and Tolsma, 2014). By studying trust in neighbours and generalized trust simultaneously, I am able to assess whether effects of increasing diversity differ for indicators of cohesion that vary in scope and target. Trust in neighbours is inherently bound to a specific geographical radius, namely the neighbourhood, whereas generalized trust is not restricted to a specific geographical scope. The former type of trust is targeted at the members of the neighbourhood community, whereas the latter is targeted at humankind as a whole. In doing so, I account for differences in the composition of the residential environments and for other relevant contextual characteristics; namely (changes in) ethnic segregation, economic deprivation and economic inequality.

Next, I take a step further in tackling the problem of causality by exploiting a natural experiment to determine whether the sudden influx of asylum seekers during the Dutch refugee crisis in 2015, a specific form of increasing ethnic diversity, into "as if" randomly assigned communities is related to a behavioural indicator of a lack of social cohesion among native Dutch: support for the radical right (Dunning, 2008; Chapter 3). Such an experimental design is even better suited to assess whether the diversity-cohesion relationship is causal in nature than a longitudinal design, because even when changes in diversity are related to changes in cohesion over time, selective processes may lead those living in residential environments where diversity increases to differ from those living in residential environments where diversity decreases. The existing studies that opted for an experimental design indicated that ethnic diversity indeed erodes social cohesion (e.g. Veit, 2015; Koopmans and Veit, 2014; Alexander and Christia, 2011). The majority of these studies are either laboratory experiments, which are plagued by questionable external validity, or field experiments, in which ethnic diversity is not subject to experimental control. With my natural experiment

I deal with both issues, because I assess the diversity-cohesion relationship in the real world instead of in a laboratory setting and because the increase in diversity (i.e. the influx of asylum seekers) occurred in seemingly randomly assigned residential environment. Table 1.1. summarizes the outline of the thesis with respect to the *whether*-question.

Table 1.1. Thesis outline with respect to the *whether*-question

Chapter	Research design	Dependent variable
Chapter 2	Longitudinal design	Trust in neighbours / Generalized trust
Chapter 3	Natural experimental design	Support for the radical right
Chapter 4	Cross-sectional design	Perceptions of ethnic diversity
Chapter 5	Cross-sectional design	Neighbourhood social cohesion
Chapter 6	Cross-sectional design	Trust in neighbours / Generalized trust

1.2.2. The why-question: theoretical mechanisms for the diversity-cohesion relationship

Existing research offers three theoretical explanations for the relationship between ethnic diversity and social cohesion. The contact mechanism predicts a positive association, whereas the threat and the anomie mechanisms predict a negative association (cf. Van der Meer and Tolsma 2014).

First, contact theory states that if people are able to socially interact with other people, they are more inclined to sympathize with these other people and to tolerate possible different norms and values these people hold (e.g. Pettigrew and Tropp, 2006; Allport, 1954). If the residential environment is ethnically diverse, the opportunities for contact with diverse others are more widespread than if the residential environment is ethnically homogeneous. The greater opportunity for interethnic contact in diverse environments translates into more actual contact with people from different ethnic backgrounds, which results in more interethnic social cohesion (Laurence, 2011; Sturgis, 2010; Stolle et al., 2008).

Besides increasing interethnic contact opportunities, ethnic diversity simultaneously decreases intra-ethnic contact opportunities and subsequently actual intra-ethnic contact for the native Dutch population (Huijts, Kraaykamp and Scheepers, 2014). Although not empirically tested, one might expect that less intra-ethnic contact in diverse environments is also related to less intra-ethnic cohesion. Moreover, because people prefer to mingle with similar others (McPherson, Smith-Lovin and Cook, 2001), the loss of contacts with coethnic neighbours might be stronger than the attainment

of contacts with non-coethnic neighbours. Consequently, with increasing diversity total neighbourly contact and subsequently overall social cohesion might actually decrease.

Second, on the basis of the group threat theory (e.g. Quillian 1995; Olzak, 1992; Lieberson, 1980; Blalock, 1967; Sherif, 1966; Blumer, 1958) researchers have contended that ethnic diversity in the residential environment is a precondition of conflicts between people from different ethnic groups. The assumption is that the presence of people with different ethnic backgrounds increases the actual or the perceived competition over scarce economic resources, such as jobs and housing, as well as over non-material resources, such as power and identity. This increase in the actual and/or the perceived competition boosts feelings of ethnic group threat, which lead, in turn, to feelings of hostility towards ethnic out-groups.

Feelings of ethnic threat ensuing from this hostility play a central role in this explanatory mechanism linking ethnic diversity to social cohesion. Ethnic threat especially undermines interethnic social cohesion, because people do not count on the ethnic out-group with conflicting interests to act in a beneficial or helpful way (Tjosvold, 1988). Moreover, in situations where the in-group is (perceived to be) threatened, such as in ethnically diverse environments, in-group favouritism is also directly related to more out-group hostility and subsequently less interethnic social cohesion (Brewer, 2001; 1999). Assuming that ethnic group threat does not affect social cohesion among coethnic neighbours, threat may be mainly related to less overall social cohesion.

Third, researchers have argued that ethnic diversity affects social cohesion negatively because of a (perceived) lack of shared norms and values between different ethnic groups in ethnically diverse environments (e.g. Gijsberts, Van der Meer and Dagevos, 2011; Coffé and Geys, 2006). According to this line of reasoning, shared group norms and values are easier established and recognized in ethnically homogeneous environments than in ethnically diverse environments. This consequently leads people in ethnically homogeneous environments to be more likely to follow a logic of appropriateness grounded in these shared group norms and values (March and Olsen, 2006). In other words, homogeneity in one's living environment suggests broadly held community norms and values, according to which people are likely to behave. These norms and values are "... followed because they are seen as natural, rightful, expected, and legitimate." (March and Olsen, 2006:1).

People in ethnically homogeneous environments are, moreover, more likely to believe that fellow residents will also act according to these same community norms and values, which stimulates individuals to be favourably disposed to relations with others. In diverse contexts such a logic of appropriateness is assumed to influence individuals' behaviour less, because in a context in which there are various, unclear and sometimes even conflicting norms and values, it is less clear to people what is

appropriate according to the broader community (Öberg, Oskarsson and Svensson, 2009). This consequently leads people in ethnically diverse environments to experience feelings of anomie, exclusion and aimlessness. These feelings, in turn, cause people to be more drawn back from other people and to trust other people less, which hampers the creation of social cohesion in these ethnically diverse environments.

Thus, ethnic diversity may affect social cohesion, because it determines contact opportunities and may lead to feelings of ethnic threat and anomie (Van de Meer and Tolsma, 2014; Laurence, 2011; Savelkoul, Gesthuizen and Scheepers, 2011; Coffé and Geys, 2006). Existing studies have empirically only focused on the mediating role of contact and threat, that is, if theoretical mechanisms were tested at all. Studies have found that actual contact dampens the negative relationship between ethnic diversity and social cohesion (Laurence, 2011; Stolle et al., 2008). The empirical evidence for the association between ethnic diversity and feelings of ethnic threat is rather weak (e.g. Savelkoul et al., 2011). If corroborative evidence is found, it is generally within relatively large geographic areas (states, countries; e.g. Quillian, 1995). Studies have not established a consistent negative mediating role of feelings of threat for the relationship between ethnic diversity within the local residential environment and social cohesion.

This thesis contributes to the field studying the diversity-cohesion relationship by providing a first empirical test of the anomie-mechanism at the individual level (see for the aggregate level: Delhey and Newton, 2005). I investigate to what extent variations in anomic feelings – individual anxiety about (the lack of) shared societal norms and moral values with which to comply – can explain the negative relationship between ethnic diversity within the small-scale residential environment (i.e. districts or '*wijken*') and two attitudinal indicators of social cohesion: trust in neighbours and generalized trust (Chapter 2). As a means to isolate the role of anomic feelings in the diversity-cohesion relationship, I simultaneously assess to what extent feelings of ethnic threat and a lack of neighbourly contact explain the association between ethnic diversity on the one hand and trust in neighbours and generalized trust on the other hand. I also address to what extent feelings of ethnic threat explain and interethnic contact suppresses the negative relationship between ethnic diversity and a behavioural indicator of social cohesion. More specifically, I examine the explanatory role of threat and contact for the influence of a sudden influx of asylum seekers in the local residential environment on support for the radical right (Chapter 3). As I study these theoretical mechanisms from both a cross-sectional and a longitudinal perspective, I also bring the field forward with respect to the contact mechanism and the threat mechanism.

I further develop knowledge about the relationship between ethnic diversity in the residential environment and social cohesion by investigating an unexplored theoretical mechanism: individuals' perceptions of the residential environment. These

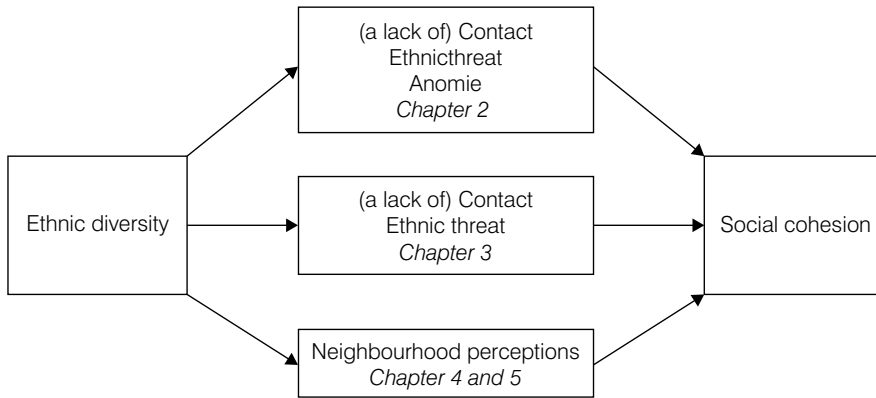
perceptions represent the information people have about the residential environment, which serve as important determinants of people's attitudes towards this environment (Ajzen, 2012; Fishbein and Ajzen, 2011). Previous research demonstrated a consistent negative association between perceived ethnic diversity and social cohesion (e.g. Hooghe and Vroome, 2015; Schaeffer, 2014b; Wickes et al., 2013; Pickett, Chiricos, Golden and Gertz, 2012). Because perceptions of ethnic diversity are, at least partly, based on the actual degree of ethnic diversity (Hipp and Wickes, 2016; Strabac, 2011; Aneshensel and Sucoff, 1996), they are a likely candidate to explain why the actual degree of ethnic diversity affects social cohesion. This is not to say that the residential environment can only be consequential if individuals are aware of it. People may, for example, have less neighbourly contact and subsequently less social cohesion in ethnically diverse neighbourhoods even though they are not consciously aware of the fact that they live in an ethnically diverse environment. However, people's perceptions of different aspects of the residential environment may serve as one of several links between the objective residential environment and people's attitudes towards that environment (Fishbein and Ajzen, 2011; Fishbein and Ajzen, 1975; Fishbein, 1963).

As a first step, I aim to find a better understanding of how perceptions of ethnic diversity are constructed. For the Netherlands I uncover how characteristics of the neighbourhood (i.e. objective group sizes, ethnic segregation, economic deprivation and crime), of surrounding neighbourhoods and experiences of interethnic contact and feelings of ethnic threat shape perceptions of ethnic diversity (Chapter 4). I investigate, as a second step, whether perceptions of ethnic diversity play an explanatory role in the relationship between objective ethnic diversity and neighbourhood cohesion for the 'most likely case': in small-scale residential environments among the ethnic majority population in the United States (cf. Van der Meer and Tolsma, 2014; Chapter 5). As enduring biases associate ethnic minority groups with poverty and crime (Wickes et al. 2013; Sampson and Graif 2009; Sampson and Raudenbush 2004), I expand knowledge further by examining to what extent perceptions of the economic and crime composition of the residential environment help to explain the diversity-cohesion relationship. Figure 1.1. summarizes the outline of the thesis with respect to the *why*-question.

1.2.3. The where-question: geographical area of the diversity-cohesion relationship

To date, scholars have not come up with clear, univocal theoretical arguments about the geographical area from which to expect the strongest effects of ethnic diversity on social cohesion. Most researchers have focused on the administrative neighbourhood level without justifying the rationale behind this choice of unit of analysis. The scholars that did account for their choice of the administrative neighbourhood as their unit of analysis argued that the smaller the locality, the more residents identify with this

Figure 1.1. Thesis outline with respect to the *why*-question



locality and are aware of its ethnic composition, the more likely these residents are affected by the ethnic composition (Hagendoorn, 2009). Moreover, they contended that the factors underlying the creation of social cohesion "*refer to the familiarity and bonds that can only be formed at a very local level*" (Letki, 2008:107).

These theoretical arguments for choosing a small unit of analysis are scarcely put to empirical scrutiny. Dinesen and Sønderskov (2015) showed for Denmark that people are indeed mostly affected by ethnic diversity within the micro-residential environment. Generalized trust is lower when ethnic diversity is high within 80 metres around people's residence. For the Netherlands, researchers have conversely demonstrated that ethnic diversity within 4,000 to 8,500 metres around people's residence is most negatively related to trust in neighbours. (Tolsma and Van der Meer, 2017; Sluiter et al, 2015). These findings do not necessarily contradict each other, as they examined different forms of social cohesion and they studied ethnic diversity within a different range of scales. This thesis aids to clarify the mixed findings by studying the relationship between ethnic diversity and both trust in neighbours and generalized trust within residential environment with radii ranging in size from 100 metres to 10,000 metres (Chapter 6). Furthermore, I examine whether the chosen scale of analysis conditions the found association between a sudden influx of asylum seekers in the residential environment and a behavioural indicator of (a lack of) social cohesion: support for the radical right. I assess the exposure to asylum seekers in administrative units of different sizes (Chapter 3).

Besides studying the impact of scale, I intend to bring the field forward by examining the impact of boundary – administratively defined or distance defined boundaries – on the relationship between diversity and cohesion (Chapter 6). I explore ethnic

diversity within administrative neighbourhoods, egohoods (cf. Hipp and Boessen, 2013), and egohoods where I restrict the used area to the administrative districts in which the individuals reside. I perform pioneering work by combining the traditional approach of using administrative units with the approach of using egocentric neighbourhoods. The resulting restricted egohoods are a valuable extension in the assessment of the impact of scale and boundary on the diversity-cohesion relationship, because administrative units can have clear demarcation lines, such as roads, rivers, built or function. These 'natural' boundaries are, in turn, important in what residents perceive as their neighbourhood (Jason and Glenwick, 2016; Lohman and McMurran, 2009).

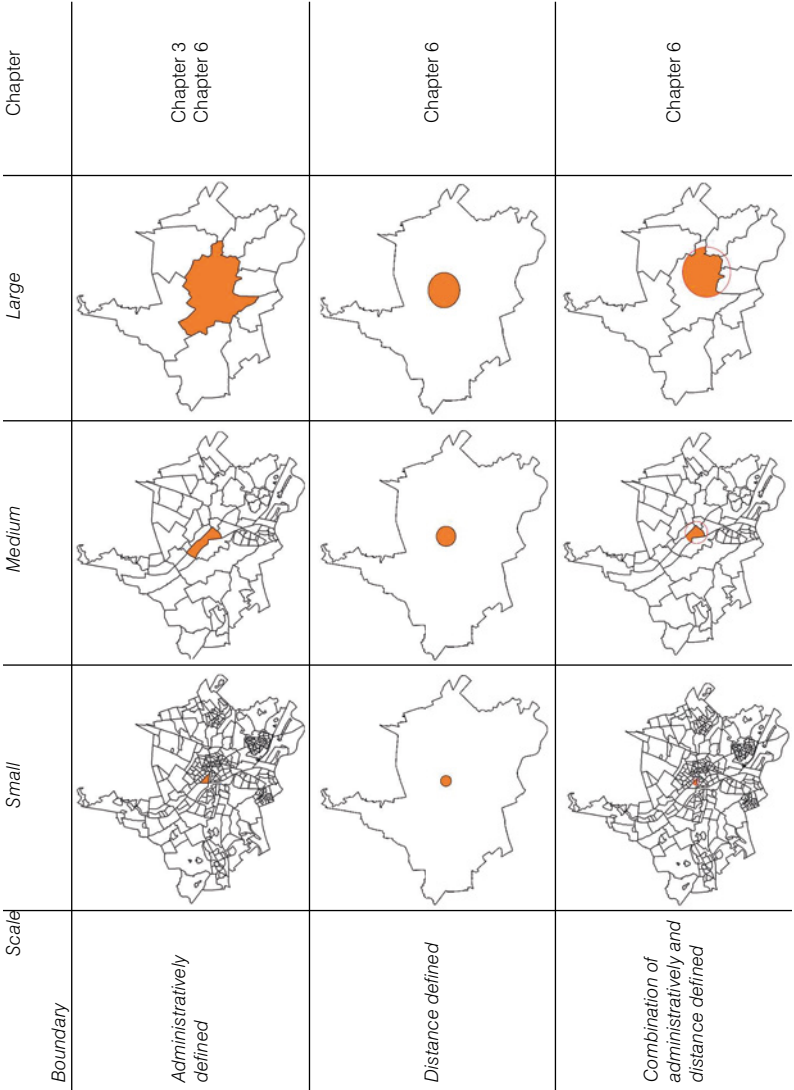
Because residential environments are no islands and are inevitably related to surrounding areas (Sampson, 2012), I also take into account the impact of the ethnic composition of adjacent residential environments, which has been left unexplored in previous research. People not only notice ethnic minorities in their own residential environment, but also in adjacent neighbourhoods when they go shopping, run errands, or commute to work and school. What they observe in surrounding areas is likely to affect their perceptions of their own neighbourhood. For the Netherlands, I therefore investigate whether people's perceptions of the degree of ethnic diversity in their own residential environment are shaped by the actual degree of ethnic diversity in adjacent residential environments in addition to being affected by the actual degree of ethnic diversity in their own residential environment (Chapter 4). Figure 1.2 and Figure 1.3 summarize the outline of the thesis with respect to the *where*-question.

1.3. Research Design

1.3.1. Data sources

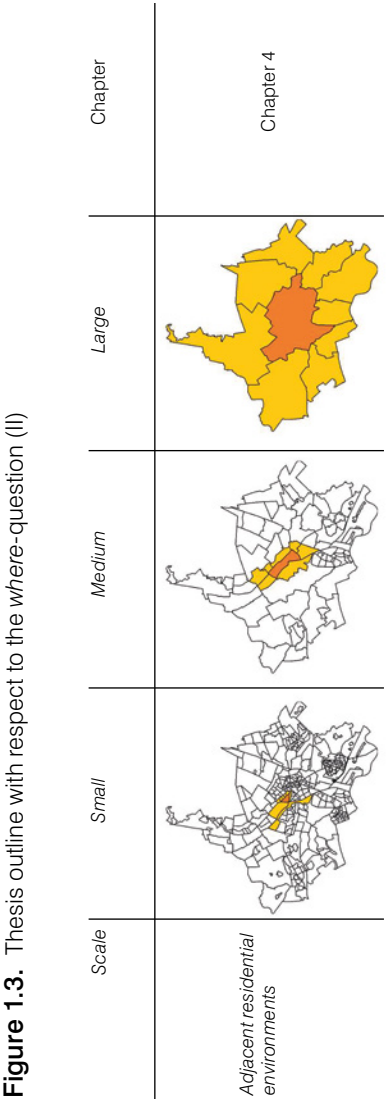
In Chapter 2 and Chapter 6, I employ the two available waves of the Netherlands Longitudinal Life course Survey (NELLS; Tolsma et al. 2014). Because social cohesion is one of the three main themes of the NELLS, it is very suitable to study this phenomenon among the native Dutch population from a longitudinal perspective. Another strong feature of the NELLS is the availability of information on neighbourly contact, ethnic threat, and anomic feelings, allowing for the first simultaneous testing of the contact, threat and anomie mechanism (Chapter 2). To this end, I enriched the NELLS with publicly available contextual data from Statistics Netherlands (2009; 2013) on ethnic diversity within districts (i.e. *wijken*). These districts are administrative areas defined by Statistics Netherlands. An additional advantage of the NELLS is that I have unique access to the exact residential location of the respondents, which provides me with the opportunity to examine the influence of geographical scale on the diversity-cohesion relationship using an egocentric neighbourhood approach

Figure 1.2. Thesis outline with respect to the where-question (I)



(Chapter 6). For this purpose I enriched the NELS with contextual data on ethnic diversity for every 100 by 100 metres surface area in the Netherlands (Statistics Netherlands, 2011).

In Chapter 3 and Chapter 4, I employ the 1Vandaag Opinion Panel Survey (1VOP). Thanks to the exceptionally large sample size (+/- 20,000 respondents), the 1VOP covers a high degree of not only the variety of people found within the Dutch



population, but also of the variety in ethnic diversity within Dutch residential environments. The choice to use this data source was further determined by the unique opportunity to add questions about voting behaviour, contact and threat in two waves. To examine whether the sudden increase in ethnic diversity is related to the support for the radical right from a longitudinal perspective (Chapter 3), I enriched the data with information about the size of the asylum seeking population and the

increase thereof, which was obtained from the Central Agency for the Reception of Asylum Seekers (COA) for four-digit postcode areas. In the first wave I additionally included a question about perceived ethnic diversity, as a means to study how individuals' perceptions of ethnic diversity are constructed (Chapter 4). For this purpose, I enriched this dataset with contextual data on ethnic diversity for four-digit postcode areas (Statistics Netherlands, 2014).

In Chapter 5, I employ data from the American Social Fabric Study (ASFS, Butts et al., 2014). The ASFS study population consists of adult, non-institutionalized residents of the western United States. I enriched this dataset with contextual data on ethnic diversity within census tracts from the U.S. Census bureau (2010). Because the ASFS contains information about both social cohesion and individuals' perceptions of the residential environment, it provides me with the unique opportunity to explore a new theoretical mechanism explaining the diversity-cohesion relationship, namely perceptions of the ethnic, economic and crime composition of the residential environment, for the 'most likely case'. After all, if a negative association between ethnic diversity and social cohesion is found, it is most consistent in small-scale residential environments (i.e. census tracts) among the ethnic majority population in the United States (cf. Van der Meer and Tolsma, 2014; Chapter 5).

1.3.2. Measurements

Social cohesion is defined in this thesis as the ties between individuals that are both the result of, and cause for, the quality of public and civic life, feelings of commitment and trust, norms of reciprocity, and participation in networks and civic organizations (Chan et al., 2006). As this definition of social cohesion is fairly broad, it is useful to distinguish between four dimensions that jointly clarify the empirical meaning of the concept (Van der Meer and Tolsma, 2014).

The first dimension of social cohesion concerns the degree of institutionalization. In existing research a differentiation is made between formal and informal social cohesion (e.g. Pichler and Wallace, 2007; Gesthuizen, Van der Meer and Scheepers, 2008). Ties between individuals that are established through formal associations constitute formal social cohesion, whereas ties between individuals that are established outside of these institutionalized contexts, such as informal friendships and family ties, comprise informal social cohesion (Letki, 2008). The second dimension of social cohesion bears upon the mode of the ties binding individuals to one another: behavioural or attitudinal interconnectedness between individuals. Social relations and civic participation constitute the behavioural component, whereas norms of reciprocity and trustworthiness constitute the attitudinal component (Anderson and Paskeviciute, 2006; Coffé and Geys, 2006). The third dimension of social cohesion involves to whom a particular person is related: another individual, a specific group of individuals (e.g. an ethnic group) or humankind as a whole (Uslaner, 2002). The fourth dimension concerns the radius, or geographical

area, to which social cohesion is bounded. Participation in civic organizations is, for example, unrelated to geographical boundaries, whereas neighbourhood satisfaction is explicitly connected to the residential environment (Wollebæk, Wallman Lundåsen and Trägårdh, 2012). On the basis of these four dimensions, I conceptualize social cohesion in various ways throughout the empirical studies. Table 1.2 summarizes the used conceptualizations per chapter.

Table 1.2. Conceptualization of social cohesion

Dimensions				
	Institutionalization	Mode of ties	The target	The radius
Chapter 2 and 6: Trust in neighbours	Informal social cohesion	Attitudinal interconnectedness	Neighbourhood community	Bounded to the neighbourhood
	Generalized trust	Attitudinal interconnectedness	Humankind as a whole	Unbounded
Chapter 3: Support for the radical right	(A lack of) formal social cohesion	Behavioural interconnectedness	Against ethnic minorities	Unbounded
Chapter 5: Neighbourhood cohesion	Informal social cohesion	Attitudinal interconnectedness	Neighbourhood community	Bounded to the neighbourhood

Ethnic diversity is in this thesis characterized by relative ethnic group sizes. I favour this indicator of ethnic diversity over the main alternative conceptualization, ethnic fractionalization, because the latter is 'colour-blind' (e.g. Lancee and Dronkers, 2011). An area where twenty percent of the residents belongs to the majority population and eighty percent of the residents belongs to the minority population is just as ethnically fractionalized as an area with the reverse composition. However, for individual residents the ethnic composition of these two areas is very distinct. As I conceptualize relative ethnic group sizes in various ways throughout the empirical chapters, I refer to the empirical chapters for descriptions of these conceptualizations.

1.3.3. Analytical strategies

I use multivariate analyses in every empirical chapter to assess the impact of the main independent variable, ethnic diversity, controlled for crucial neighbourhood-level and individual-level variables.

In Chapter 2 I rely on three-level hybrid panel models in which observations are not only nested in neighbourhoods, but also in respondents. Hybrid panel models are an alternative to standard random-effects and fixed-effects models because they allow for the examination of the impact of time-varying characteristics and time-invariant characteristics simultaneously (Schunck, 2013). These models are, moreover, suitable to deal with unbalanced data and more complex error structures (i.e. nesting in districts; cf. Allison, 2009). In Chapter 3 I employ multinomial fixed effects models (cf. Allison, 2009). The influence of all time-invariant characteristics are removed in fixed effects models, allowing me to assess the net effect of being exposed to asylum seekers on individuals' changes in voting intentions. In Chapter 4 I focus on explaining perceptions of the ethnic outgroup size and overestimations thereof. As the former may be interpreted as a count variable, I rely on multilevel negative binomial models. For the latter I estimate multilevel logistic models. In Chapter 5 I estimate multilevel structural equation models (Muthén and Muthén, 1998-2012). I do so because traditional multilevel modelling approaches fail to account for the fact that mediation of the diversity-cohesion relationship can only occur at contextual level, and these models may therefore produce biased estimates of the indirect effects (Preacher, Zyphur and Zhang, 2011; 2010). In Chapter 6 I conceptualize the residential environment as an ego-centred living environment. I estimate spatial error models to take into account spatial error correlation and not to underestimate the standard error of the diversity effect. These models assume that the error term of a respondent correlates similarly with all other respondents living in his or her egohood.

1.4. Outline of empirical chapters

1.4.1. Chapter 2: Trust thy neighbour: when and why does neighbourhood diversity affect trust?

Ethnic diversity in the neighbourhood is shown to be negatively related to cohesion in the neighbourhood community. However, to date, most studies are based on cross-sectional research and refrain from explaining why this negative association would exist in the first place. In this study I examine the impact of ethnic diversity on social trust from a longitudinal perspective and test three theoretical pathways – (a lack of) contact, threat and anomie – that may explain why in ethnically diverse neighbourhoods social trust is lower. These tests are performed for native Dutch extracted from the Netherlands Longitudinal Life course Study (NELLS). I employ hybrid panel models (2 waves; 3867 observations; 2360 unique respondents living in 238 neighbourhoods), in which I extensively control for confounders at the individual and neighbourhood level. For native Dutch, more diversity in the neighbourhood is related to less trust in neighbours but not to less generalized trust. An increase in diversity is, however, not related, to a decrease in trust in neighbours. Continual and steady increases in ethnic diversity are thus not as detrimental for social trust as could be concluded on the basis of existing cross-sectional research. One should therefore be careful to interpret the negative association between diversity and cohesion as a causal relationship. The analyses furthermore demonstrate the importance of contact, threat and anomie as determinants of trust in neighbours and generalized trust. Increases in neighbourly contact are only related to increases in trust in neighbours. Contact with neighbours thus seems to aid in the construction of a shared neighbourhood identity on which trust in fellow residents is built, while it simultaneously seems to contribute to the neighbourhood as a demarcation criterion on which in- and out-groups are formed which inhibits a spill-over to generalized trust. Increases in feelings of group threat and anomie are, on the other hand, especially related to decreases in generalized trust. The fact that the measures of threat and anomie are not directly related to the local neighbourhood community possibly explains why these feelings do not coincide with lower levels of trust in neighbours as well.

1.4.2. Chapter 3: Exposure to asylum seekers and changing support for the radical right. A natural experiment in the Netherlands

In this chapter I take a closer look at changes in support for the radical right in the Netherlands due to the large influx of asylum seekers during the 2015 refugee crisis. The availability of a longitudinal and sizeable dataset on individual respondents (N=19,100; 1Vandaag Opinion Panel Survey) allows me to investigate to what extent the share of voters who is exposed to a sudden influx of asylum seekers in their direct living environment is more likely to change their voting intention to the PVV, and to

what extent this can be explained by ethnic threat and interethnic contact. I enriched the individual-level panel dataset with detailed information about asylum seeker centres (ASCs) from the Central Agency for the Reception of Asylum Seekers (COA). The establishment of ASCs over the course of 2015 in certain places has been largely exogenous to our outcome of interest: intentions to vote for the PVV. The data thus allows me to perform a unique natural experiment by comparing individuals that received the treatment – an ASC in the local environment and consequently exposure to asylum seekers – and individuals that did not get the treatment from a longitudinal perspective (i.e. controlling for (un)observed time-invariant confounders). I find that people who experience an increase in exposure to asylum seekers in their residential environment are indeed more likely to support the radical right. People are thus receptive of abrupt, rapid and most importantly visible increases in the number of immigrants. Within small-scale neighbourhoods, people are mostly affected by an increase in exposure to asylum seekers in crisis centres, whereas people are mostly affected by an increase in exposure to asylum seekers in temporary centres within municipalities. Notwithstanding that ethnic threat is an important determinant for voting for the radical right, it does not explain the effect of exposure to asylum seekers. Interethnic contact does not seem to suppress or weaken the positive influence of the exposure to asylum seekers on support for the radical right. The results, by contrast, cautiously point to stronger intentions to vote for the PVV among people who experienced an increase in interethnic contact over the course of 2015 compared to people who did not. This might reflect an increase of negative contact as a consequence of the sudden influx of asylum seekers, which may have fuelled instead of suppressed support for the radical right.

1.4.3. Chapter 4: Size is in the eye of the beholder: how differences between neighbourhoods and individuals explain variation in estimations of the ethnic outgroup size in the neighbourhood

In this study I shed light on the various ways in which native Dutch estimate the size of the ethnic minority population in their neighbourhood. I formulate hypotheses on how characteristics of the neighbourhood (i.e. objective group sizes, ethnic segregation, economic deprivation and crime), of surrounding neighbourhoods and experiences of interethnic contact and feelings of ethnic threat shape perceptions of the ethnic outgroup size. I employ individual-level data from the 1Vandaag Opinion Panel enriched with contextual-level data from Statistics Netherlands (24,538 respondents in 3,113 neighbourhoods). Variation in residents' perceptions of the ethnic outgroup size exists both between neighbourhoods and within neighbourhoods. I demonstrate that native Dutch are more likely to overestimate the size of the non-western minority population than the size of the western minority population. In economically deprived and high crime neighbourhoods, residents are more likely to overestimate the size of

the ethnic outgroup. The likely prevalence of ethnic stereotypes linking ethnic minorities to both poverty and crime in the Netherlands may explain why this is the case. Larger ethnic outgroup sizes in surrounding neighbourhoods are associated with the sense that one's own neighbourhood also contains more ethnic minority residents, albeit less strongly than ethnic outgroup sizes in one's own neighbourhood. As segregation, deprivation and crime in adjacent neighbourhoods do not play a substantial role in explaining people's perceptions of the ethnic outgroup size at all, I conclude that the influence of environmental features on people's neighbourhood perceptions should be studied at the local level. With respect to interethnic contact experiences, we find that contact with non-western minorities in particular increases the perception and overestimation of ethnic minorities. Ethnic threat is strongly related to the perception of ethnic minorities in the neighbourhood. Threat possibly makes people more aware of the presence of ethnic minorities in the neighbourhood, and consequently makes them more likely to overestimate the actual ethnic outgroup size. However, we should be cautious with making strong causal interpretations as this study relied on cross-sectional data.

1.4.4. Chapter 5: Perceptions as the crucial link? The mediating role of neighbourhood perceptions in the relationship between the neighbourhood context and neighbourhood cohesion

This study examines the effects of neighbourhood ethnic in-group size, economic deprivation and the prevalence of crime on neighbourhood cohesion among U.S. whites. I explore to what extent residents' perceptions of their neighbourhood mediate these macro-micro relationships. I use a recent individual-level data set, the American Social Fabric Study (2012/2013), enriched with contextual-level data from the U.S. Census Bureau (2010) and employ multi-level structural equation models. I show that whites living in neighbourhoods with other whites experience, on average, more neighbourhood social cohesion than whites living in neighbourhoods with non-whites. Besides living among whites, the results suggest that living in low crime communities also facilitates neighbourhood cohesion. The association between the number of whites and neighbourhood cohesion is similar in strength as the association between the prevalence of crime in the community and neighbourhood cohesion. I observe that economic deprivation is only negatively associated with neighbourhood cohesive norms and not with attitudes towards neighbourhood cohesive behaviour. This is surprising in light of the fact that previous research did consistently demonstrate a negative relationship between economic deprivation and social cohesion. Individuals' perceptions of the ethnic in-group size mediate the relationship between the objective ethnic in-group size and neighbourhood cohesion. Residents' perceptions of unsafety from crime also appear to be a mediating factor, not only for the objective crime rate but also for the objective ethnic in-group size. Ethnic stereotypes linking ethnic

minorities and poverty to crime may explain why neighbourhoods with a large non-white population are perceived to be more unsafe from crime. Residents of the same neighbourhood differ in how they perceive the economic condition of the neighbourhood and this causes them to evaluate neighbourhood cohesion differently. However, perceptions of neighbourhood economic deprivation do not explain the link between the objective neighbourhood context and neighbourhood cohesion. Apart from the mediating role of neighbourhood perceptions, this study provides insights into how these perceptions come about. Perceptions of the size of the ethnic in-group, economic deprivation and crime rate are shaped by other characteristics than the corresponding objective neighbourhood characteristics. Whites are less likely to perceive economic deprivation when they live among other whites. Moreover, once we take into account the actual size of the white population, whites still perceive more whites in their neighbourhood when they live in low crime communities.

1.4.5. Chapter 6: Where does ethnic diversity affect social trust? How the scale and the type of boundary of a residential environment influence the diversity-trust relationship

In this chapter I examine the impact of scale – defined by geographical area – and of the type of boundary – defined by distance or administratively defined – on the relationship between ethnic diversity and two attitudinal indicators of social cohesion: trust in neighbours and generalized trust. The vast majority of existing studies on the diversity-cohesion relationship, traditionally and without an explicit theoretical foundation, perceived the relevant local environment as spatially bounded administrative neighbourhoods. Instead, I use an egocentric neighbourhood approach (Hipp and Boessen, 2013). In this state-of-the-art approach researchers define their residential units of analysis by distance as overlapping concentric circles with different radii and the individual residents at their centres (see also Östh, Malmberg, and Andersson (2014) for egocentric neighbourhoods based on population size). In addition to capturing ethnic diversity within these egohoods, I am the first to explore ethnic diversity within egohoods where I restrict the used area to the administrative districts in which the individuals reside. The egocentric neighbourhoods are constructed for a sample of native Dutch respondents from the first wave of the Netherlands Longitudinal Life course Survey (NELLS; De Graaf et al, 2010). In line with existing research I uncover a negative relationship between ethnic diversity and social trust, which is more consistent and stronger for trust in neighbours than for generalized trust (Schaffer, 2014a; Van der Meer and Tolsma, 2014). However, this is not to say that the geographical design of a study does not affect found results. Whereas I do not find much evidence for the impact of the type of boundary of the residential environment on the diversity-cohesion relationship, I do find a substantial influence of the scale of the residential environment on the diversity-cohesion relationship. I show that only

within the smallest scale egohood ethnic diversity is negatively associated with generalized trust, meaning that I would have overlooked this association if I had focussed on administrative districts or municipalities. Ethnic diversity is consistently related to lower levels of trust in neighbours across different levels of aggregation. But also for trust in neighbours, ethnic diversity has a weaker impact in large-scale egohoods than in small-scale egohoods. Notwithstanding this general pattern, I also show that there is a limit to how local one should examine the diversity-cohesion relationship. Therefore I conclude that the most relevant geographic context to investigate the relationship between ethnic diversity and the used indicators of cohesion, trust in neighbours and generalized trust, is an egohood with a radius larger than 100 metres but smaller or equal to 250 metres.

1.5. Conclusion and Discussion

Western societies are becoming increasingly diverse in terms of people's ethnic background. This process of increasing diversification is also visible in the Netherlands. The trend of the past fifty years whereby more people immigrated to than emigrated from the Netherlands will likely continue in the coming decades. Whereas Statistics Netherlands forecasts that the ethnic majority population will shrink from 13.2 million in 2015 to 12.4 million in 2060, they anticipate that the ethnic minority population will increase from 3.7 million in 2015 to 5.7 million in 2060 (Van Duin and Stoeldraaijer, 2014). The consequences of increasing ethnic diversity for social cohesion thus remain a topical subject of research. The relevance of this thesis, which is looking to improve the understanding of *whether*, *why*, and *where* ethnic diversity affects social cohesion, should be viewed within this context. In five empirical chapters I have developed knowledge pertaining to these three questions.

Regarding the *whether*-question, I scrutinized the causal nature of the relationship between ethnic diversity and social cohesion. In line with previous cross-sectional research, I uncover that ethnic diversity is unrelated to generalized trust, whereas it is negatively related to trust in neighbours (Schaeffer, 2014a; Van der Meer and Tolsma, 2014). I expand existing knowledge by showing that this association does not hold longitudinally: people do not become more distrusting of their neighbours when ethnic diversity increases in their residential environment. Steady, long-term increases in ethnic diversity are thus not as detrimental for social cohesion as one might conclude on the basis of existing cross-sectional research. This is, however, not to say that diversity does not challenge cohesion at all. In the short run, ethnic diversity does – in any case temporarily – inhibit social cohesion. Abrupt, rapid and visible increases in the number of immigrants decrease interethnic behavioural cohesion, at least for as long as familiarization (Savelkoul et al., 2011; Schneider, 2008) or out-migration have not

taken place. This is in line with the scarce existing longitudinal research (Laurence and Bentley, 2016; Lancee and Schaeffer, 2015; Levels et al., 2015) to the extent that negative diversity effects are most likely to be found for formal modes of cohesion or cohesion targeted at the ethnic minority population. However, over the course of ten years, a relationship between increasing ethnic diversity and decreasing attachment to the neighbourhood community was also found (Laurence and Bentley, 2016). This suggests that only extreme changes in diversity over longer periods of time are detrimental for bounded forms of social cohesion, such as community attachment and trust in neighbours. A promising direction for future studies would therefore be to invest in more advanced panel design analyses, ideally based on more than two waves of individual-level panel data. This investment could contribute to expanding knowledge about the influence of the size of the change in ethnic diversity and the time-span in which this change occurs on the found diversity-cohesion relationship.

With respect to the *why*-question, I tested both established and new theoretical mechanisms that could explain a negative relationship between ethnic diversity and social cohesion. I find that neighbourly contact is an important stimulus for trust in neighbours, whereas ethnic threat and anomie are harmful for generalized trust. Ethnic threat does not only hamper attitudinal social cohesion but also behavioural social cohesion. Notwithstanding the importance of these findings, the association between ethnic diversity and social cohesion is hardly explained by anomie, threat or a lack of contact. In continuation of this conclusion, I turned to a relatively unexplored theoretical mechanism that could explain the diversity-cohesion relationship: individuals' perceptions of the residential environment. I show that both perceived ethnic diversity and perceived unsafety from crime mediate the found diversity-cohesion relationship in the United States. Ethnic stereotypes linking ethnic minorities to crime may explain why ethnically diverse neighbourhoods are perceived to be more unsafe from crime, and are subsequently less cohesive. As I uncover that perceived ethnic diversity in the Netherlands is shaped by economic deprivation and the prevalence of crime, such stereotypes might also be important in explaining the diversity-cohesion relationship in this country. I conclude that individuals' perceptions of the residential environment are to be reckoned with when explaining the relationship between ethnic diversity and cohesion in particular and neighbourhood effects in general. Not ethnic diversity in itself, but what ethnic diversity represents in a given residential environment seems to matter (Hipp and Wickes, 2016; Wickes et al., 2013; Pickett et al., 2012). The proposition that ethnic stereotypes may explain these findings could be tested in future research by including measures of ethnic stereotypes into the explanatory model. The established theoretical mechanisms explaining the diversity-cohesion relationship – the contact, threat, and anomie mechanisms – should not be disregarded either, as contact, ethnic threat and anomic feelings are important determinants of social cohesion.

Concerning the *where*-question, I have contributed to existing research by exploring new ways of defining the residential environment and by assessing the influence of the geographical design on the diversity-cohesion relationship. Unlike the type of boundary of the residential environment, the scale of the residential environment does impact the found relationship between ethnic diversity and social cohesion. In support of the scarce theorization in the field, I conclude that the diversity-cohesion relationship is generally strongest within small-scale residential environments. People seem to identify more strongly with the very local residential context, and are therefore more aware of and affected by the ethnic composition of this small-scale residential environment. Awareness of the ethnic composition can, however, vary according to specific circumstances, as I have shown for the exposure to asylum seekers. If variation in the awareness of the ethnic composition or changes thereof occur at a higher scale, one might also expect ethnic diversity to be related to social cohesion at a higher scale. This concurs with my finding that people's perceptions of ethnic diversity within their own residential environment is also partly attributed to the ethnic composition of surrounding environments. If the size of the non-western minority population is higher in adjacent residential environment, people make a higher estimation of the ethnic outgroup size in their own residential environment. A promising direction for future research would be to gain a better understanding of which geographical area people perceive as their neighbourhood, and whether this differs for different groups of residents. If the "true causally relevant" geographic context is unknown to researchers studying neighbourhood effects, the ego-centred neighbourhood approach offers a flexible opportunity to, at least empirically, explore the most relevant context. This approach overcomes the drawbacks of using administrative units, because egohoods are equal in size for every resident, they cover the area most proximal to the resident, and they can be varied in size from an area corresponding to a few streets to an area corresponding to a whole municipality.

Although this thesis produced valuable knowledge concerning *whether*, *why* and *where* ethnic diversity is related to social cohesion, there are also several limitations that need to be considered. First, I made the choice to focus on the ethnic majority population in this thesis, not only because I acknowledge that different mechanisms may play a role in explaining social cohesion among the ethnic minority population, but also because of practical reasons of limited data availability for the ethnic minority population in the Netherlands as well as in the United States. Unfortunately, my choice does limit the generalizability of the conclusions of this thesis, because a substantial share of the population in the areas under study are of immigrant descent. A fruitful direction for future research would therefore be to focus on the ethnic minority population, with or without making a comparison to the ethnic majority population.

Second, I used individual support for the radical right as an indicator for a lack of social cohesion. Because the *Partij voor de Vrijheid* (PVV), the radical right party under investigation, is known for its anti-immigration statements and its campaign to 'de-Islamize' the Netherlands, I argue that support for this party could be seen as an indication of the erosion of, at least, cohesion between native Dutch and the ethnic minority (Muslim) population. I recognize, however, that support for the PVV may not be a perfect indication of a lack of social cohesion, as people might also support the PVV for its anti-EU standpoints instead of its anti-immigration standpoints and, more generally, as one might argue that supporting a political party, regardless of its standpoints, is a form of civic participation and thus actually an expression of cohesive behaviour (Chan et al, 2006). This is a noteworthy drawback of this thesis, because I find the most consistent evidence for a negative influence of ethnic diversity on cohesion conceptualized as support for the radical right. Future research is necessary to reveal whether a sudden, unexpected increase in diversity is also harmful for other, more established indicators of social cohesion.

Third, I only tested the role of neighbourhood perceptions in explaining the diversity-cohesion relationship cross-sectionally. Notwithstanding that it is a first step in investigating a new and unexplored theoretical mechanism, the use of a cross-sectional design does limit the implications of my findings. Future research using longitudinal data, which is better equipped to deal with both selective residential mobility into neighbourhoods and reverse causality between neighbourhood perceptions and neighbourhood cohesion, needs to further establish the mediating role of perceptions of both the ethnic and the crime composition of the residential environment. More research is, furthermore, necessary to investigate the relative importance of these perceptions for explaining the diversity-cohesion relationship with respect to the more established theoretical mechanisms, contact, threat, and anomie. Even more so, because I have shown that people who have more interethnic contact and who experience more ethnic threat perceive more ethnic diversity and have a higher chance of overestimating the ethnic outgroup size than people who have less interethnic contact and who experience less ethnic threat.

Notwithstanding these limitations, this thesis, besides making important contributions to the academic field studying the diversity-cohesion relationship, also provides insights relevant for policy makers. First and foremost, it is imperative for policy makers not to exaggerate the negative influence of ethnic diversity on social cohesion. Whereas unforeseen and sudden increases in ethnic diversity do hamper social cohesion in the short run, steady long-term increases in diversity are seemingly unrelated to decreases in cohesion. This implies that, while policy makers should obviously take the negative consequences of the unanticipated increases in ethnic diversity for social cohesion seriously, they should not lose sight of other factors that play more decisive roles in shaping cohesion. Because increases in contact with

fellow residents as well as decreases in feelings of threat and anomie foster social cohesion, policy makers could focus on stimulating projects aimed at facilitating neighbourhood contact opportunities and projects focused on reducing ethnic threat and anomie. Moreover, given that I showed that perceptions of the neighbourhood are important in explaining social cohesion over and above the actual neighbourhood conditions, it could be more fruitful as well as less radical and costly to influence residents' perceptions of ethnic diversity than to change the actual ethnic composition of the residential environment.



2

TRUST THY NEIGHBOUR: WHEN AND WHY DOES NEIGHBOURHOOD DIVERSITY AFFECT TRUST?*

* A slightly different version is currently under review at an international journal
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2.1. Introduction

High levels of trust in society can stimulate economic growth, facilitate the effective functioning of labour markets, ameliorate public health, improve the performance of governmental institutions and positively influence people's general well-being and happiness (e.g. Halpern, 2001; Kawachi, 1999; but see Portes, 1998 for a critique). Trust has many guises; trust in institutions is not the same as trusting people, and when you trust your neighbours, it does not necessarily mean that you think that people in general can be trusted. Neighbourhood effects on trust have received ample scientific attention and it has quite consistently been demonstrated that members of the ethnic majority group who live in ethnically diverse neighbourhoods trust their neighbours less but that this lack of trust in neighbours does not necessarily spill over to more generalized forms of trust (e.g. Dinesen and Sønderskov, 2015; Laurence, 2011).

Studies on neighbourhood effects often imply a causal order and a causal mechanism. Unfortunately, up till now, whether increases in ethnic diversity are also related to decreases in trust has remained unclear. Within the proliferating literature following Putnam's claim that ethnic diversity erodes social cohesion (Putnam, 2007), studies that have adopted panel designs are scarce (see for exceptions: Laurence and Bentley, 2016; Lancee and Schaeffer, 2015; Levels, Scheepers, Huijts and Kraaykamp, 2015). In addition, why ethnic diversity would be related to trust is simply unknown. The assumed mechanisms – the contact mechanism derived from macro-structural theory of intergroup relations (Blau 1994) and contact theory (Allport, 1954), the threat mechanism derived from conflict theory (Quillian, 1995; Blalock, 1967), and the anomie mechanism (Van der Meer and Tolsma, 2014; Putnam, 2007) – have seldom been tested. Let alone that these alternative theoretical mechanisms have been tested simultaneously in a panel design.

A cross-sectional relationship between neighbourhood diversity and trust can both result in an overestimation of a diversity effect, because of selection bias (e.g. people low in trust tend to live in heterogeneous neighbourhoods), and in an underestimation of a diversity effect, because of selective residential mobility (e.g. residents who dislike diversity and exert low levels of trust move to a more homogenous neighbourhood). With our panel data, we are able to estimate multi-level hybrid panel models (cf. Allison, 2009). This enables us to assess how mean levels of diversity are related to mean levels of trust (i.e. time-invariant effects) and to assess how changing levels of diversity are related to changing levels of trust (i.e. time-varying or fixed effects). Although this does not solve the causality problem completely, it is a necessary step in the right direction.

So far only three studies tested Putnam's constrict claim (Putnam, 2007) with longitudinal data at the individual level. Lancee and Schaeffer (2015) assessed the impact of moving to a more diverse neighbourhood. They showed, for Germany, that

moving to a more diverse neighbourhood increased individuals' likelihood to become concerned about immigration (their indicator of cohesion). Using the same individual-level dataset, Levels et al. (2015) did not find such a negative relationship between changing diversity and cohesion among non-movers. They demonstrated that increases in diversity over the course of five years, within large districts, were not related to decreases in generalized trust. Relating one-decade changes in diversity to individuals' neighbourhood evaluations, Laurence and Bentley (2016) conversely did find a negative effect for the United Kingdom.

The variety in the indicators of social cohesion, the variety in the time span over which changes in diversity are captured and the variety in the geographical scale of analysis do not only explain the lack of a clear consensus on whether a harmful effect of ethnic diversity on cohesion exists, but also call for further longitudinal research. We make several contributions to the field studying the diversity-cohesion relationship. First, we study trust in neighbours and generalized trust simultaneously, which allows us to study diverging diversity effects on bounded and unbounded forms of cohesion dynamically. Second, we measure changes in diversity over a relatively short period of time (+/- 4 years). Third, we focus on individuals' local living environments, explicitly building on knowledge from cross-sectional research that showed that, if negative diversity effects are found at all, it is from diversity of small-scale surroundings (Van der Meer and Tolsma, 2014).

In this study we will, moreover, assess to what extent contact, threat and anomie explain the relationship between (a change in) neighbourhood diversity and (a change in) trust. We are, to our knowledge, the first in the field to study the validity of these different explanatory mechanisms simultaneously as well as to do so from a longitudinal perspective. We will employ the first and second wave of the Netherlands Longitudinal Life course Survey (NELLS; Tolsma et al., 2014). The two waves of the NELLS data have, on average, been performed 3 years and 7 months apart. To make sure that found effects of ethnic diversity can truly be attributed to diversity and not to possible composition differences between neighbourhoods or to other neighbourhood characteristics, we rigorously control for likely determinants of trust at both the individual and neighbourhood level.

In sum, in this chapter I address the *whether*- and the *why*-question by assessing whether increases in ethnic diversity are related to decreases in trust, and whether the found relation can be explained by (a lack of) neighbourly contact, feelings of ethnic threat and anomic feelings. The significance of this study is, besides scientific, also societal. Policy makers readily accepted Putnam's claim that the presence of ethnic minorities erodes all aspects of cohesion (Putnam, 2007). Whereas these generic negative consequences are vastly overblown (cf. Portes and Vickstrom, 2011) and evidence for negative diversity effects in the USA are contested (Abascal and Baldassarri, 2015), neighbourhood diversity seems to be consistently related to

lower levels of neighbourhood cohesion. In this study we will attempt to shed more light on why this is the case as well as on when and why such negative diversity effects spill over to generalized trust.

2.2. Explaining the Diversity-Trust Relationship

We focus on trust in neighbours and generalized trust (Yamagashi and Yamagashi, 1994). Both types of trust are informal forms and attitudinal modes of social cohesion. They differ, however, with respect to scope and target (cf. Van der Meer and Tolsma, 2014). Trust in neighbours is inherently bound to a specific geographical radius, namely the neighbourhood, whereas generalized trust is not restricted to a specific geographical scope. The former type of trust is targeted at the members of the neighbourhood community, whereas the latter is targeted at humankind as a whole. Delhey, Newton and Welzel (2011) already concluded that generalized trust is indeed distinguishable from trust in neighbours. They demonstrated that generalized trust connotes trust in – what they refer to as – out-groups, such as people you meet for the first time and people of another religion or nationality, and not trust in – what they refer to as – in-groups, such as your family, people you know personally or your neighbours.

2.2.1. The contact-mechanism

The level of ethnic neighbourhood diversity sets the opportunity for intra-ethnic and interethnic neighbourly contact (Blau, 1994). A small number of ethnic ingroup members residing in the neighbourhood is related to less contact opportunities with coethnic neighbours and with more opportunity for contact with non-coethnic neighbours. We therefore expect that a smaller share of coethnic residents is related to less contact with coethnic neighbours and to more contact with non-coethnic neighbours (Huijts, Kraaykamp and Scheepers, 2014). However, as people prefer to mingle with similar others (McPherson, Smith-Lovin and Cook, 2001), we expect that the loss of contacts with coethnic neighbours will be stronger than the attainment of contacts with non-coethnic neighbours and consequently that with increasing diversity neighbourly contact will decrease.

This decrease in contact with fellow neighbourhood residents in ethnically diverse neighbourhoods will subsequently decrease trust. Contact with other people is namely important in reducing prejudice against unknown others (cf. Pettigrew, 1998) and in decreasing social distance between people. Less prejudice and social distance translates, in turn, into more willingness to trust (e.g. Gundelach and Freitag, 2014; Vroome, Hooghe and Marien, 2013). Neighbourly contact is also important in the construction of a shared neighbourhood identity and thereby of a sense of group

belonging. People who feel they belong to the neighbourhood community will subsequently be more trusting of their neighbours. Moreover, if the neighbourhood constitutes such an important part of people's frame of reference, we expect that the impact of diversity on generalized trust (via neighbourly contact) is similar to the impact of diversity on trust in neighbours.

Thus, we expect that ethnic diversity is negatively related to trust in neighbours and generalized trust, because there is less neighbourly contact in ethnically diverse neighbourhoods.

2.2.2. The Threat-Mechanism

Ethnic group threat arises as a consequence of actual or perceived competition between different ethnic groups over scarce material or symbolic resources (Bobo, 1988; Sears, 1988). Ethnic diversity in one's neighbourhood and increases therein may foster competition between different ethnic groups, thereby increasing feelings of ethnic threat (cf. Blalock, 1967). The link between ethnic diversity and feelings of threat is, however, empirically weak (e.g. Savelkoul, Gesthuizen and Scheepers, 2011). If corroborative evidence is found, it is generally within relatively large geographic areas (states, countries) (e.g. Quillian, 1995, but see Schlueter and Scheepers, 2010). Olzak (1992) already stressed the need to consider increases in ethnic diversity in addition to the static degree of ethnic diversity in explaining feelings of ethnic threat. We therefore consider the possibility that feelings of group threat arise as a consequence of not only current ethnic diversity, but also as a consequence of changes thereof.

Feelings of ethnic group threat have consistently been shown to be related to trust in ethnic out-groups. These feelings of threat undermine interethnic trust as people do not count on the ethnic out-group with conflicting interests to act in a beneficial or helpful way (Tjosvold, 1988). Assuming that ethnic group threat does not affect trust in ingroup members, individuals' feelings of threat will in ethnically diverse neighbourhoods be related to less trust in neighbours in general, which would possibly spill over to less generalized trust.

Thus, we expect that ethnic diversity is negatively related to trust in neighbours and generalized trust, because people experience more ethnic group threat in ethnically diverse neighbourhoods.

2.2.3. The Anomie-Mechanism

Anomie has been offered as a third possible explanation for a negative relationship between diversity and cohesion (Van der Meer and Tolsma 2014; Putnam, 2007). Anomie can be described as individuals' insecurity and anxiety ensuing from a (perceived) lack of shared societal norms and moral values in the living environment (Smith and Bohm, 2008; Seeman, 1959). Ethnic groups may have different social norms, values and speak different languages. Ethnic diversity in the neighbourhood

may therefore result in a diversity of social norms and values along ethnic lines, thereby making it unclear to individuals what is appropriate according to the broader community (Öberg, Oskarsson and Svensson, 2011). As a result of this uncertainty about the existence of a shared logic of behavioural appropriateness, it is even less likely that effective communication networks arise (Sampson and Bartusch, 1998). Thus residents living in an ethnically diverse neighbourhood are more likely to experience anomie (Smith and Bohm, 2008; Seeman, 1959).

Not knowing how someone will behave will make it more difficult to trust this person. But a state of anomie may also make people insecure about how to behave themselves. This in turn will make people feel lonely and detached from society (Wu, Hou and Schimmele, 2011). These anomic feelings of loneliness and detachment ensuing from the insecurity of how to act do not necessarily disappear when people leave their neighbourhood community to go shopping, run errands, or commute to work and school (Tolsma and Van der Meer, 2017). This would suggest that ethnic diversity in the neighbourhood also negatively relates to generalized trust.

Thus, we expect that ethnic diversity is negatively related to trust in neighbours and generalized trust, because people experience more anomic feelings in ethnically diverse neighbourhoods.

2.2.4. Other neighbourhood characteristics

The chances for residents to meet and mingle with neighbours with a different ethnic background are smaller in ethnically segregated neighbourhoods (Semyonov and Glikman, 2009). At the same time, co-ethnic residents may be more likely to meet because they live in the same parts of the segregated neighbourhood. Segregation may also heighten the visibility of ethnic out-groups (e.g. Biggs and Knauss, 2012) and may make the existence of divergent norms and values between different ethnic groups more apparent. As a result, residents may therefore be more likely to experience ethnic threat and anomie in segregated neighbourhoods. Because segregation may affect contact, threat and anomie, we control for ethnic segregation in our explanatory models.

Neighbourhoods differ in the extent to which they offer their residents resources with which to get into contact with one another. In economically deprived neighbourhoods, the opportunity structure to meet and mingle with fellow neighbourhood residents is less favourable because of infrastructure, public facilities, safety in the neighbourhood and residential stability (Tolsma, Van der Meer and Gesthuizen, 2009). Contact preferences are affected by neighbourhood deprivation as well; neighbourhood deprivation diminishes individuals' willingness to socialize with their neighbours, regardless of their ethnicity (Laurence, 2011). Furthermore, experiences of competitive threat will be more severe when resources are scarce (Quillian, 1995). We thus may expect that neighbourhood deprivation is related to trust, because of its

relation with neighbourly contact and perceived competitive threat. We therefore control for economic deprivation in our analyses.

Economic inequality can be seen as a source of differentiation along economic lines (Paskov and Dewilde, 2012). As individuals prefer to interact with people who are similar to themselves (McPherson et al., 2001; Blau, 1994), we expect people living in economically unequal neighbourhoods to have less contact with other neighbourhood residents. Economic inequality is shown to be related to status insecurities as well as status competition (Wilkinson and Pickett, 2009). We argue that status competition may, in turn, make people more sensitive to perceived ethnic threat. Individuals living in economically unequal localities may, furthermore, be less likely to experience the feeling of being a part of a larger social order, and consequently, are more likely to experience anomie (Rothstein and Uslaner, 2005). Because inequality may be related to contact, threat and anomie, we also control for this neighbourhood characteristic in our analyses.

2.2.5. Individual characteristics

To take into account possible neighbourhood composition effects, we control for several known determinants of trust at the individual level. Education is known to be related to an increased exposure to a tolerant and cosmopolitan culture, resulting in higher educated individuals being less opposed to difference and consequently more trusting of others (e.g. Stolle, 1998). Income and employment status are also associated with trust. The more secure an individual's financial position is (having a higher income / being employed), the more a person can afford to take the risk of being wrong when trusting other people (e.g. Alesina and La Ferrara, 2000; Brehm and Rahn, 1997). Similarly, age is considered as a resource variable for trust. Older people are more experienced in assessing the risk of trusting other people, therefore trusting others is less costly for older people than for younger people (e.g. Stolle, 1998). Previous studies have demonstrated that religiosity is positively related to trust. Religion brings about an organized worldview, which increases individuals' sense of predictability of others and consequently their trustworthiness (e.g. Delhey and Newton, 2005). The presence of children in one's home may increase feelings of vulnerability, which in turn may decrease individual's trust (e.g. Paxton, 2007). As some of these individual-level determinants of trust are correlated with gender, we also take into account this demographic factor.

2.3. Data and Methods

This study uses data on individual residents from the Netherlands Longitudinal Life course Survey (NELLS; Tolsma et al. 2014). For the collection of the NELLS data, a two-stage stratified sampling was applied. The first stage was a quasi-random selection of 35 municipalities by region and urbanization, and the second stage was a random selection from the population registry based on age (15-45 years old) and country of birth. To date, two waves of data have been collected (2009/2010 and 2013). In the first wave 2556 native Dutch were interviewed. Of those respondents, 1703 individuals were re-interviewed in the second wave.

Our neighbourhood characteristics are constructed based on publicly available data from Statistics Netherlands (2009; 2013). We define neighbourhoods in this study as districts (*'wijken'*). These districts are administrative areas defined by Statistics Netherlands. These areas are smaller than municipalities and larger than the lowest spatial classification of Statistics Netherlands (*'buurten'*). Subunits within our neighbourhoods are defined as these smallest administrative areas, which we need for the calculation of ethnic segregation and economic inequality.

2.3.1. Indicators of trust

Trust in neighbours is measured using the following statement: 'The people living in this neighbourhood can be trusted'. The answer categories are: 1.'not true at all', 2.'not very true', 3.'somewhat true', and 4.'very true'. *Generalized trust* is measured with a mean score on the basis of the following three statements: 'You can't be too careful in dealing with people.', 'If you trust too easily, people will take advantage of you.', and 'You will often be cheated when you help others.'. The answer categories are: 1.'strongly agree', 2.'somewhat agree', 3.'neither agree nor disagree', 4.'somewhat disagree', and 5.'strongly disagree' (Cronbach's alpha = 0.73).

2.3.2. Mediators

Contact with neighbours is measured with the item 'How often do you have personal contact with people from your neighbourhood?' The answer categories are: 1.'never', 2.'about once a year', 3.'several times a year', 4.'about once a month', 5.'several times a month', 6.'several times a week', and 7.'(almost) every day'. Personal contact is in this study defined as knowing the other person's name and talking to this person occasionally. Our measure of contact with neighbours is included as a continuous variable.

Threat is measured with a mean score constructed on the basis of five items referred to as *group threat*: 'It is better for a country if everyone has the same habits and traditions.', 'It is better for a country if different religious convictions coexist.', 'It is better for a country if everyone speaks the same language.', 'Minority groups have

the right to set up their own schools.', and 'If a country wants to decrease tensions, it should stop immigration.' (Cronbach's $\alpha=0.62$). The answer categories are: 1.'strongly agree', 2.'somewhat agree', 3.'neither agree nor disagree', 4.'somewhat disagree', and 5.'strongly disagree'. Our measure of threat is included as a continuous variable.

Anomie is measured in three ways. First, as a mean score constructed on the basis of the *anomie scale* of Srole (1956), which consists of the following five items: 'These days a person doesn't really know on whom he can count.', 'Most people are not all that great once you get to know them.', 'Getting a better life for yourself mainly depends on being lucky.', 'In spite of what some people say, the lot of the average man is getting worse.', and 'Being critical of politicians is useless because politicians aren't bothered by your opinion anyway.'. The answer categories are: 1.'strongly disagree', 2.'somewhat disagree', 3.'neither agree nor disagree', 4.'somewhat agree', and 5.'strongly agree' (Cronbach's $\alpha=0.87$). Second, anomie is measured as *anxiety* with the item 'In the past week, I felt scared.' (derived from the HAD scale – Zigmond and Snaith, 1983). The answer categories are: 1.'seldom or never', 2.'sometimes', 3.'regularly', and 4.'often or always'. Third, the *insecurity* component of anomie is measured with the item 'There are enough people to whom I feel closely connected.' (part of Loneliness scale - De Jong et al. 1999). The answer categories are: 1.'fully applicable', 2.'somewhat applicable', 3.'not really applicable', and 4.'not applicable at all'. Our measures of anomie are included as a continuous variables.

2.3.3. Ethnic diversity

We use ethnic out-group size as our indicator of ethnic diversity and it is operationalized as the percentage of non-western immigrants in the neighbourhood. Following the definition of Statistics Netherlands, people are considered to be non-western immigrants when at least one of their parents is born in a non-western country. About twelve percent of the Dutch population is considered to be of non-western descent (Statistics Netherlands, 2014a). The largest non-western immigrant groups in the Netherlands are Moroccans (2.2%), Turks (2.4%), Surinamese and Antilleans (2.9%). The percentage of non-western immigrants for the neighbourhoods in which our respondents live range in 2013 from 0 to 85%; the mean value is 9%. We include out-group size as a proportion for reasons of interpretability of the estimates.

For our native Dutch respondents, the ethnic out-group size is highly correlated to one of the most widely used indices for diversity, the Herfindahl Index ($r=0.84$). Preliminary analyses demonstrated that using the Herfindahl Index instead of the ethnic out-group size leads to similar results (available upon request).

2.3.4. Neighbourhood-level control variables

Ethnic segregation is measured using a two-group dissimilarity index. This index can be interpreted as the proportion of a group that would need to move in order to create a uniform distribution of the population. This operationalization is based on the distinction between native Dutch individuals and non-western immigrants. *Economic deprivation* is measured on the basis of the average housing value in the area. These housing values are measured in 100,000 Euros. We recoded this measure, so that a higher score on this indicator of economic deprivation corresponds to a higher degree of economic deprivation. For *economic inequality*, we use the Gini-index, which indicates the extent to which the geographical distribution of housing values within a particular area deviates from a perfectly equal distribution. A score of zero on this index reflects perfect socioeconomic equality in an area, whereas a score of one on this index expresses perfect socioeconomic inequality in an area.

2.3.5. Individual-level control variables

Education is measured in years. Net monthly *household income* is also included. The midpoint values of sixteen possible income ranges are used (lowest category gets a value of €75, - and the highest category a value of €7000,-). *Labour market position* is operationalized using three categories: 'employed', 'unemployed' and 'non-employed'. *Age* is taken up in years in the analyses. With respect to religiosity, *church attendance* is taken up in the analyses (1.'never', 2.'1-2 times a year', 3.'3-11 times a year', 4.'once a month', 5.'2-3 times a month', 6.'every week', and 7.'several times a week'). *Household composition* is constructed on the basis of marital/cohabiting status (single versus married/cohabiting) and on whether or not respondents have children, resulting in six categories: 'single, no children', 'single, no children living at home', 'single, children living at home', 'couple, no children', 'couple, no children living at home', and 'couple, children living at home'. *Gender* is included with males coded as 1 and females as 0.

2.3.6. Working sample and missing values

We excluded respondents who moved across neighbourhoods between the two waves (N=190), because for movers a change in diversity is different than for non-movers who see their own neighbourhood change in diversity (cf. Laurence and Bentley, 2016). We further excluded respondents who had missing values on the neighbourhood characteristics (N=6).

We replaced missing values at the individual level through multiple imputations (20 imputed datasets) using the Amelia II package in R 3.3.2 (Honaker, King and Blackwell, 2015). Our final sample consists of 2360 respondents (of which 1507 respondents are re-interviewed in the second wave) living in 238 neighbourhoods. The descriptive statistics are summarized in Table 2.1.

Table 2.1. Descriptive statistics

	Wave 1			Wave 2			Δ (Wave 2 - Wave 1)			
	mean/ prop.	sd	% missing	mean/ prop.	sd	% missing	Δ Mean	Δ sd	Δ Min	Δ Max
<i>Individual-level variables</i>										
<i>Dependent variables</i>										
Trust in neighbours (1-4)	3.27	0.74	0	3.35	0.71	0	0.00	0.76	-3	3
Generalized trust (3-15)	9.29	2.12	4.18	9.53	2.08	0	0.13	1.88	-9	10
<i>Mediators</i>										
Contact neighbours (1-7)	4.68	1.80	3.85	4.60	1.70	0	-0.20	1.83	-6	6
Feelings of Group Threat (6-25)	15.81	2.98	4.40	15.55	2.95	0	-0.24	2.60	-10	10
Anomie (Sole) (8-20)	11.49	2.17	0	11.12	3.01	0	-0.31	3.21	-10	12
Anomie (Anxiety) (1-4)	1.14	0.46	4.18	1.14	0.45	0	0.01	0.56	-3	3
Anomie (Insecurity) (1-4)	1.75	0.61	4.14	1.71	0.63	0	-0.04	0.68	-3	3
<i>Control variables</i>										
Gender (male=1)	0.47		0	0.46		0				
Age (15-50)	32.16	8.98	0	36.50	9.11	0	3.70	0.64	2.14	5.74
Education (4-16,5)	10.61	3.25	1.78	11.49	3.04	1.26	0.75	2.12	-10.0	12.5
Labour market position			1.78			8.06				
- Employed	0.88			0.86						
- Non-employed	0.06			0.03						
- Unemployed	0.06			0.11						
Household income/1000 (0.075-7)	2.23	1.50	10.01	2.68	1.48	13.02	3.42	1.05	-5.75	5.67

2.3.7. Methods

On average, approximately ten respondents share the same neighbourhood. These respondents are thus not independent from one another. For a portion of our sample, we have two observations per respondent and we also need to take this additional dependency into account. We rely on three-level hybrid panel models in which observations are not only nested in neighbourhoods but also in respondents. At the observational level, we control for wave. Hybrid panel models are an alternative to standard random-effects and fixed-effects models because they allow us to examine the impact of time-varying characteristics and time-invariant characteristics simultaneously (Schunck, 2013). Hybrid panel models are suitable to deal with unbalanced data such and with more complex error structures (i.e. nesting in neighbourhoods; cf. Allison, 2009).

In Table 2.1 we observe that, on average, the changes in respondents' levels of trust between the two waves of NELLs are not very substantial. That said, the variance is in the same order of magnitude as for the level of trust in either wave 1 or 2. We observe changes in trust in neighbours between -3 to +3, whereas generalized trust changed between -9 to +10. With respect to changes in neighbourhood characteristics, it is interesting to note that out-group size on average increased, with observed changes ranging from -4% to +5%. In a time span of four years this is substantial. The variance in changes of ethnic diversity is nevertheless smaller than the variance in the (static) ethnic diversity in wave 1 or 2; making it harder to pick up significant longitudinal effects.

2.4. Results

Table 2.2 summarizes the impact of ethnic diversity (Model 1) and the mediators (Model 2) on trust in neighbours and on generalized trust. Table 2.3 summarizes the impact of ethnic diversity on the three mediators: contact, threat and anomie. The neighbourhood-level and individual-level control variables are included in the presented models (see Appendix 1 and Appendix 2 for the control variables). With respect to the neighbourhood-level control variables, we find that economic deprivation and economic inequality are, as expected, negatively associated with trust in neighbours. Our individual-level control variables are similarly related with trust as found in previous research. Higher educated, more affluent and more religious people hold more trust in neighbours and more generalized trust. Older people have more trust in neighbours than younger people, whereas employed people have more generalized trust than unemployed people. The inclusion of these control variables did not alter our main findings (results are available upon request).

Model 1 (Table 2.2) shows that the size of the ethnic out-group is negatively related to trust in neighbours ($b=-1.370/se=0.183$). The size of the ethnic out-group

is, on the other hand, not significantly related to generalized trust. Whereas this contradicts our expectation, previous cross-sectional research has shown that the size of the ethnic out-group in the local environment most negatively affects bounded forms of trust, such as trust in neighbours (Van der Meer and Tolsma 2014). In line with Levels et al. (2015), we do not find that a change in the ethnic out-group size is related to a change in generalized trust. In addition, we show that the ethnic out-group size does not have a significant time-varying effect on trust in neighbours either. Even for a bounded form of trust, for which the strongest negative effects are found in cross-sectional research, we do not find that an increase in the ethnic out-group size is significantly related to a decrease in trust. That said, the time-varying effect is in the same order of magnitude as the time-invariant effect. It needs to be noted that the larger standard errors for the time-varying estimates (in comparison to the time-invariant estimates) could be an indication that the variation over time of the ethnic out-group size is too small to estimate fixed effects (Allison, 2009).

In model 2 (Table 2.2) we include our mediator variables into the explanatory model. For trust in neighbours, contact with neighbours seems to be an important determinant. Not only do people with more neighbourly contact have more trust in neighbours ($b=0.085$, $se=0.008$) also increased contact with neighbours goes hand in hand with increased trust in neighbours ($b=0.047/se=0.011$). Given that contact with neighbours is unrelated to generalized contact, these results are in line with our idea that the neighbourhood constitutes a demarcation criterion on which in- and out-groups are formed. Table 2.3 shows that out-group size is negatively related to contact with neighbours ($b=-1.472$, $se=0.445$). We also observe a decrease in the estimated time-invariant coefficient of the ethnic out-group size on trust in neighbours (from $b=-1.370$ to $b=-1.184$), which seems to indicate that, at least cross-sectionally, neighbourly contact partly explains the negative relationship between ethnic out-group size and trust in neighbours.

Feelings of group threat seem to be an important determinant for generalized trust. Not only do people who experience more group threat have less generalized trust ($b=-0.173$, $se=0.013$), but increases in group threat also coincide with decreases in generalized trust ($b=-0.077$, $se=0.019$). However, as the ethnic out-group size is unrelated to both group threat (Table 2.3) and generalized trust (Table 2.2), group threat cannot explain any negative association between the ethnic composition of the neighbourhood and trust. Unexpectedly, we find that if a person becomes more threatened by ethnic minorities, the amount of trust in neighbours increases ($b=0.015$, $se=0.008$). An explanation could be that if people start to feel more ethnically threatened, they pull back from broader society (losing generalized trust) and start to focus more on the neighbourhood (gaining trust in neighbours). In models without individual-level control variables, (time-invariant) group threat is, as expected, negatively related to trust in neighbours (not shown).

Table 2.2. Hybrid models explaining trust among native Dutch

	Trust in Neighbours		Generalized Trust	
	Model 1	Model 2	Model 1	Model 2
<i>Time-invariant</i>				
Out-group size	-1.370 (0.183) ***	-1.184 (0.174) ***	-0.720 (0.525)	-0.642 (0.437)
Contact neighbours				
Threat		0.085 (0.008) ***		-0.003 (0.022)
Anomie (Srole)		-0.004 (0.005)		-0.173 (0.013) ***
Anomie (Anxiety)		-0.040 (0.006) ***		-0.291 (0.018) ***
Anomie (Insecurity)		-0.097 (0.033) **		-0.217 (0.091) *
		-0.030 (0.023)		-0.224 (0.063) **
<i>Time-varying</i>				
Out-group size	-1.157 (1.705)	-1.016 (1.677)	6.833 (4.663)	7.572 (4.487)
Contact neighbours				
Threat		0.047 (0.011) ***		0.012 (0.027)
Anomie (Srole)		0.015 (0.008) *		-0.077 (0.019) ***
Anomie (Anxiety)		0.001 (0.006)		-0.068 (0.015) ***
Anomie (Insecurity)		-0.002 (0.036)		-0.219 (0.088) *
		-0.037 (0.030)		-0.123 (0.073)

Sources: *NELLS wave 1 and 2 and Statistics Netherlands (2009; 2013)*
Notes: Regression coefficients with standard errors in parentheses. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (two-tailed test). Models are controlled for neighbourhood-level and individual-level control variables. $N_{\text{observations}} = 3867$; $N_{\text{individuals}} = 2360$; $N_{\text{neighbourhoods}} = 238$.

Table 2.3. Hybrid models explaining contact, threat and anomie among native Dutch

	Contact neighbours	Group threat	Anomie (Srole)	Anomie (Anxiety)	Anomie (Insecurity)
<i>Time-invariant</i>					
Out-group size	-1.472 (0.445) ***	-0.952 (0.843) ***	0.620 (0.553) ***	0.220 (0.106) * ***	0.141 (0.155) ***
<i>Time-varying</i>					
Out-group size	2.227 (4.263)	-10.832 (6.587)	2.862 (6.396)	0.148 (1.190)	1.396 (1.542)

Sources: *NELLS wave 1 and 2 and Statistics Netherlands (2009; 2013)*

Notes: Regression coefficients with standard errors in parentheses. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (two-tailed test). Models are controlled for neighbourhood-level and individual-level control variables. $N_{\text{observations}} = 3867$; $N_{\text{individuals}} = 2360$; $N_{\text{neighbourhoods}} = 238$.

We are the first in the field to empirically test the role of anomie in explaining trust. We find that feelings of anomie are negatively related to both trust in neighbours and generalized trust (respectively $b=-0.040$ $se=0.006$ and $b=-0.291$, $se=0.018$ for anomie (Srole)). Increases in anomic feelings are only negatively associated with decreases in generalized trust ($b=-0.068$, $se=0.015$ for anomie (Srole) and $b=-0.219$, $se=0.088$ for anomie (anxiety)). Table 2.3 further shows that the ethnic out-group size is related to one of the three measures of anomie (i.e. anxiety), but only at the time-invariant level ($b=0.220$, $se=0.106$). This dimension of anomie thus seems, at least cross-sectionally, to partly explain how ethnic diversity in the neighbourhood can (indirectly) impact trust.

In sum, a larger out-group size is related to less trust in neighbours. In part this is the result of less neighbourly contact in such neighbourhoods and more feelings of anomie. When contact with neighbours increases, so does neighbourhood trust. Feelings of threat and anomie are especially important in explaining changing levels of generalized trust.

2.5. Conclusions

In this study more knowledge as to *whether* and *why* ethnic diversity in the neighbourhood affects trust among the native Dutch population is developed.

Previous studies on the diversity-social cohesion relationship have, almost without exception (but see: Laurence and Bentley, 2016; Lancee and Schaeffer, 2015; Levels et al., 2015), been performed with (repeated) cross-sectional datasets. We were fortunate enough to have a large-scale individual-level panel dataset available to us, which allowed us to model the extent to which changes in the ethnic composition in the neighbourhood are related to changes in both trust in neighbours and generalized trust. On the basis of our panel analyses, we conclude that – controlling for selection effects – increasing ethnic out-group size is not detrimental for trust: neither for generalized trust, nor for trust in neighbours, for which previous cross-sectional research did demonstrate an eroding effect of ethnic diversity (cf. Van der Meer and Tolsma, 2014). Since Laurence and Bentley (2016) did, over a period of ten years, find a negative relationship between increasing ethnic diversity and decreasing attachment to the neighbourhood community, it could be that only extreme changes in diversity over longer periods of time are detrimental for bounded form of social cohesion, such as community attachment and trust in neighbours. Future studies should invest in more advanced panel design analyses, ideally based on more than two waves of individual-level panel data, as a means to increase knowledge about the influence of the size of the change in ethnic diversity and the time-span in which this change occurs on the found diversity-cohesion relationship.

Besides addressing the causal nature of the relationship between ethnic diversity and trust, the aim of our study was to explain diversity effects. We identified three usual suspects – contact, threat and anomie – which could possibly mediate the relationship between diversity and trust. Our analyses demonstrated the importance of contact, threat and anomie as determinants of trust in neighbours and generalized trust. Increases in neighbourly contact are only related to increases in trust in neighbours. Contact with neighbours thus seems to aid in the construction of a shared neighbourhood identity on which trust in fellow residents is built, while it simultaneously seems to contribute to the neighbourhood as a demarcation criterion on which in- and out-groups are formed which inhibits a spill-over to generalized trust. Increases in feelings of group threat and anomie are, on the other hand, related to decreases in generalized trust.

The fact that our measure of threat refers to the national level, rather than to the local neighbourhood environment, possibly explains why threat does not coincide with lower levels of trust in neighbours. Similarly, our measures of anomie reflect feelings of insecurity and anxiety ensuing from a (perceived) lack of shared societal norms and moral values in general, not directly related to the local neighbourhood community. We are, however, the first to put the role of anomie on the individual level to empirical scrutiny. Nevertheless, we recognize that our measures of anomie could be improved upon and therefore encourage scholars to put the anomie mechanism to further empirical scrutiny. Future studies could also incorporate residents' perceptions of the neighbourhood, such as subjective estimations of ethnic group sizes, as a means to improve understanding of the ways in which the living environment affects social cohesion in general and people's trust in particular.

We further acknowledge that different mechanisms may play a role in explaining ethnic minorities' trust (Fieldhouse and Cutts, 2010) but addressing differential effects across ethnic groups was beyond the scope of this study. It therefore remains to be seen whether the same conclusions would hold for the non-native population.

Our findings do not only add to the body of existing scientific knowledge concerning the diversity-cohesion relationship, they also provide insights relevant for policy makers. With our panel analyses, we show that the negative relationship between a large ethnic out-group size in the neighbourhood and residents' feelings of trust is likely (in part) due to selection effects and not necessarily due to changing levels of diversity. People who are more distrusting of others are more likely to live in neighbourhoods with a large ethnic out-group. Policy makers in the Netherlands should therefore not be concerned with preventing large concentrations of ethnic minorities in neighbourhoods. Because we showed that increases in contact with fellow residents as well as decreases in feelings of threat and anomie stimulate trust, policy makers should be imbued with a sense of urgency to stimulate projects aimed at facilitating neighbourhood contact opportunities and projects focused on reducing group threat and anomie.



3

EXPOSURE TO ASYLUM SEEKERS AND CHANGING SUPPORT FOR THE RADICAL RIGHT. A NATURAL EXPERIMENT IN THE NETHERLANDS*

* A slightly different version is currently under review at an international journal
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3.1. Introduction

An unprecedented refugee crisis unfolded in Europe over the course of 2015 (OECD, 2015), which brought about political turmoil in many countries. The Netherlands, the site of study, was no exception. Against the background of the arrival of more than 40,000 asylum seekers (255 applicants per 100,000 inhabitants; Eurostat, 2016), the centre-left and centre-right party forming the government in this country fiercely debated the development of a united strategy for dealing with the asylum seekers within the country as well as within Europe. The refugee crisis not only evoked divergent reactions among politicians, but also among the wider public; the Dutch people made their voices heard, both in support of and in opposition to the arrival of asylum seekers. While the Netherlands Red Cross saw their stock of temporary volunteers grow from 6,000 to more than 36,000 (The Netherlands Red Cross, 2015), public demonstrations against the arrival of asylum seekers also intensified over the course of 2015. Especially in municipalities where asylum seeker centres (hereafter referred to as “ASCs”) were established, people expressed their disapproval by hanging anti-refugee banners on the assigned buildings, ‘*Own People First*’ being a typical slogan. In some places these protests got out of hand, with protesters storming an ASC, throwing fireworks at the police or destroying fences surrounding a town hall where a meeting about asylum seekers was taking place (Stoker and Singeling, 2016).

In this study we examine changes in voting intentions for the radical right against the backdrop of these sudden arrivals in the Netherlands. The *Partij voor de Vrijheid* (Party for Freedom; PVV) was founded in 2006 and has been led since then by Geert Wilders. The PVV is in 2015 the only radical right party in the Netherlands with seats in Parliament (Immerzeel et al., 2011; Bakker et al., 2015). The PVV is known for its anti-immigration stance and its campaign to ‘de-Islamize’ the country. Against the background of the European refugee crisis, the PVV started targeting (Muslim) asylum seekers in its political discourse. In October 2015, Wilders announced the launch of a website on which people can make complaints about asylum seekers (PVV, 2015). After the mass assault in Cologne, Germany, on New Year’s Eve 2016, Wilders further spread the idea that all male asylum seekers should be locked up (Sims, 2016). Judging by general election polls from January to December 2015, the PVV successfully tapped into public concern about the arrival of asylum seekers in the Netherlands (Louwerse, 2016).

The first aim of our study is to examine the extent to which voters who have been exposed to a sudden and unexpected influx of asylum seekers in their neighbourhood are more likely to switch their allegiance to the PVV than those who have not experienced such exposure. The ethnic composition of people’s local environment is a focal point in scholarly attempts to explain the popularity of radical right parties (e.g.

Green, Sarrašin, Baur and Fasel, 2015; Coffé, Heyndels and Vermeir, 2007; Lubbers and Scheepers, 2002). In the Netherlands, the presence of a non-Western ethnic minority population in a neighbourhood is associated with more support for the radical right (Savelkoul, Laméris, and Tolsma, 2017; Dinas and Van Spanje, 2011). At higher levels of aggregation (i.e. municipalities and countries), increases in the ethnic minority population have also been related to support for the radical right (e.g. Kessler and Freeman, 2005; Lubbers and Scheepers, 2000). However, whether a sudden influx of asylum seekers to a neighbourhood also increases individuals' inclination to vote for radical right parties is to date unknown.

The second aim of this study is to explain the observed relationship between asylum seekers in the neighbourhood and support for the radical right via the threat and contact mechanisms. The presumed positive relationship between the two ensues from conflict theory (e.g. Olzak, 1992; Blalock, 1967; Coser, 1956), and states that an increasing immigrant population fosters ethnic threat, which is the central attitudinal driving force behind support for the radical right (e.g. Ivarsflaten, 2008; Rydgren, 2007). In contrast, on the basis of contact theory (Allport, 1954) and the macro-structural theory of intergroup relations (Blau, 1994), a negative relationship between the influx of asylum seekers and support for the radical right would be expected. Increasing opportunities for interethnic contact lead to an increase in actual contact, which stimulates interethnic tolerance (Pettigrew and Tropp, 2011) and consequently less support for the radical right. The few existing cross-sectional studies have found support for both the threat and contact mechanisms, albeit weaker support for the latter (Savelkoul et al., 2017; Green et al., 2015; Rydgren, 2008). We are the first to test these explanations simultaneously from a longitudinal perspective.

The third and last aim of this study is to investigate from which parties new supporters for the PVV came from during the 2015 refugee crisis. Individual-level studies of shifts in voting preferences are scarce, mainly due to the lack of suitable data (Kuhn, 2009). An exception with respect to the Dutch context is the study by Van der Meer et al. (2015), which showed that the electoral field is characterized by high levels of volatility. However, if people's voting intentions change, they mainly change within the left-wing bloc consisting of Labour (PvdA), GreenLeft (GL) and the Socialist Party (SP) or within the right-wing bloc consisting of liberal-conservatives (VVD), Christian-democrats (CDA) and the PVV. An exception is the exchange between the PVV and the SP, both of which are considered to be populist, anti-establishment parties (Immerzeel, Lubbers and Coffé, 2016; Bakker et al., 2015). Our contribution to this field is to disentangle, for the radical right, to what extent the pattern of switching voting intentions differs between people who are exposed to asylum seekers in their neighbourhood and people who are not. Moreover, we also consider the demobilized electorate as a potential source of new supporters for the PVV (Rydgren, 2010).

To address these three aims, we employ a longitudinal and sizeable dataset of individual respondents (N=19,100; 1Vandaag Opinion Panel Survey) enriched with detailed information about where (new) refugees were housed, obtained from the Central Agency for the Reception of Asylum Seekers (COA). The period between the two waves of our data (February and November 2015) spanned the period in which the settlement of asylum seekers in residential environments across the Netherlands took place. Our research design resembles a natural experiment, because neighbourhood residents had no or only limited say in where new asylum seekers would be housed and because in the time window of the study, residents who were unhappy about the arrival of asylum seekers in their neighbourhood had not yet had the chance to move away. To control even more rigorously for unobserved (time stable) heterogeneity, we estimate multinomial fixed effects models to test our hypotheses.

In sum, this chapter covers the *whether*- and *why*-question by assessing whether an increase in diversity (i.e. the sudden influx of asylum seekers) affects interethnic cohesion (i.e. radical right support), and whether the found relationship can be explained through interethnic contact and ethnic threat. The *where*-question is also addressed in this chapter by examining the exposure to asylum seekers within residential environments of different sizes (i.e. neighbourhoods, neighbourhoods including adjacent neighbourhoods and municipalities) in robustness analyses.

3.2. Theoretical expectations

3.2.1. The impact of the influx of asylum seekers on support for the radical right

The proximity of non-native residents is considered to be an important explanatory factor for support for the radical right among the native population (e.g. Green et al., 2015; Stockemer, 2015; Valdez, 2014; Van Gent, Jansen and Smits, 2014; Biggs and Knaus, 2012). On the basis of conflict theory (Bobo, 1999; Blalock, 1967; Coser, 1956), scholars argue that the presence of non-natives in the local environment may foster support for the radical right, because it increases competition between natives and non-natives for economic resources (e.g. jobs and affordable housing) and in relation to cultural issues (e.g. conflicting values towards homosexuals, freedom of speech). Feelings of ethnic threat, which are the main driving force for support for the radical right (e.g. Lucassen and Lubbers, 2012; Werts, Scheepers and Lubbers, 2013), ensue from this actual or perceived competition along ethnic lines. The empirical evidence for the threat mechanism is, however, rather mixed. Some studies have shown that support for the radical right is indeed more prevalent in areas where more non-native residents live (e.g. Valdez, 2014; Coffé et al., 2007; Lubbers and Scheepers, 2002), whereas others have found that the presence of a non-native

population is negatively related or unrelated to radical right voting (e.g. Bowyer, 2008; Lubbers and Scheepers, 2000).

The presence of recently arrived asylum seekers in the neighbourhood has received little attention in terms of explaining the intention to vote for the radical right. Studies that have related the number of asylum seekers to support for the radical right have focused on the national level (Werts et al., 2013; Arzheimer, 2009; Norris, 2005). However, none of these studies has examined the consequences of the most recent refugee crisis. We argue that feelings of ethnic threat are particularly triggered by abrupt, rapid and, most importantly, visible increases in the number of immigrants, such as asylum seekers (Olzak, 1992). We therefore expect that sudden increases in asylum seekers in a given environment will be more consistently related to support for the radical right than the actual size of the non-native population (Kaufmann, 2017; Ceobanu and Escandell, 2010; Kessler and Freeman, 2005).

A possible second reason for earlier mixed findings may be found in macro-structural theory of intergroup relations (Blau, 1994) and contact theory (Allport, 1954). An increase in opportunities for contact with the non-native population may lead to an increase in positive contact between native Dutch and non-native Dutch (Blau, 1994), which in turn fosters tolerance (Pettigrew and Tropp, 2011; Allport, 1954), and renders native Dutch less likely to support the radical right (Savelkoul et al., 2017; Green et al., 2015). Not taking into account the contact mechanism may thus obscure a positive relation between (changes in) the size of non-native populations and support for the radical right.

In this study, we put the threat and contact mechanisms to empirical scrutiny. We take advantage of a natural experiment and we focus on the impact of the sudden influx of asylum seekers in neighbourhoods across the Netherlands during the 2015 refugee crisis. Over the course of that year, media coverage of asylum seekers increased substantially. The five biggest newspapers addressed the refugee crisis in 7.1% to 15.8% of their articles in August 2015, where they did so in only 0.6% to 2.8% of their articles in January 2015 (Van Teeffelen, 2016). Concurrently, the share of the Dutch population that mentioned immigration as one of the two most important issues facing the Netherlands at that moment increased between February 2015 and November 2015 from 9% to 56% (European Commission, 2015a; 2015b). The influx of asylum seekers was thus not only sudden and relatively unexpected, but also coincided with a widespread focus on the immigration issue in the media and among the public. This turned neighbourhoods where ASCs were established into so-called politicized places (Hopkins, 2011; 2010) – neighbourhoods in which a positive relationship between the presence of asylum seekers and support for the radical right is likely.

We thus expect voters who did not previously intend to vote for the PVV but who were suddenly exposed to asylum seekers in their neighbourhood to be more likely

to switch to the PVV than their counterparts in neighbourhoods that did not experience such an influx (Hypothesis 1). We expect, on the basis of conflict theory, that these changes in voting intention as a consequence of exposure to asylum seekers may be explained by perceptions of ethnic threat (Hypothesis 2a) and, on the basis of contact theory, may be suppressed by interethnic contact (Hypothesis 2b).

3.2.2. The pattern of changing voting preferences

According to the Downsian perspective on voting behaviour, people compare their own ideological standpoint to the election programs of competing political parties, and vote for the political party that is ideologically closest to them. The assumption is that voters are rational actors who attempt to maximize their expected utility by selecting the party that best matches their political ideology (Sanders, Clarke, Stewart and Whiteley, 2011; Downs, 1957). Research on political ideology has shown that in modern complex societies, standpoints of political parties and people's political preferences cannot be captured in a single ideological dimension; instead, there are various ideological dimensions across different political issues (Jong a Pin, Laméris and Garretsen, 2017; Feldman and Johnston 2014; Gerber et al., 2010; Jost, Federico, and Napier, 2009). Consequently, voters need to assess the distance between their own preferences and the standpoints of all political parties across all dimensions of political ideology to maximize their expected utility.

To simplify this complicated decision-making process, people tend to attach relative weight to a broad range of political issues and corresponding dimensions of political ideology. The most important political dimensions are then decisive in selecting a political party to vote for (Mauerer, 2015; Adams et al. 2005). The significance of certain political issues and corresponding dimensions in voting behaviour is, in turn, influenced by issue salience as well as by political parties' issue ownership (Meguid, 2005). Heightened salience as expressed by political and public focus on a specific political issue can increase the relative importance that voters attach to it. Voters are consequently inclined to select the political party that is considered to be the most credible proponent, or owner, of the issue in question (Lefevere, Tresch and Walgrave, 2015; Lachat, 2014; Bélanger and Meguid, 2008).

The sudden influx of asylum seekers over the course of 2015 has increased the saliency of the immigration issue for many Dutch citizens; this issue has occupied a prominent place in the political as well as the public debate (Van Teeffelen, 2016; European Commission, 2015a; 2015b). However, we argue that its saliency particularly increased in neighbourhoods that, as a consequence of the settlement of asylum seekers, became politicized places (Hopkins, 2010; 2011). Voters who live in these places attach more value to the immigration issue and are consequently more likely to consider it a decisive dimension when choosing how to vote than those who do not. As previous research has shown that voters are not whimsical and mainly switch

between parties that are ideologically similar (Van der Meer et al., 2015), new supporters for the PVV are expected to come from other right-wing parties, which traditionally own issues of national pride and cultural unity that can be credibly aligned with a tough stance on immigration (Bale, 2008). We thus expect those who are exposed to asylum seekers in the neighbourhood to be especially likely to switch to the PVV from political parties that are ideologically close to it on the immigration issue (i.e. VVD, CDA, SGP) (Hypothesis 3).

The PVV is a populist radical right party; besides its firm anti-immigration stance, it propounds a clear anti-establishment rhetoric (Immerzeel et al., 2016; Bakker et al., 2015). In the Dutch electoral field, the socialist party SP also presents itself as a true alternative to the established political parties and claims to stand up for “the people” (March, 2011). In employing this populist political style (Jagers and Walgrave, 2007), the PVV and the SP are ideologically proximal. From the Downsian perspective on voting behaviour (Sanders et al., 2011; Downs, 1957), the shared anti-establishment rhetoric may thus play a role in voters’ decision-making process, rendering voting switches between the PVV and the SP likely. During the 2015 refugee crisis, immigration and anti-establishment issues coincided; many Dutch citizens felt that the governing parties did not take their complaints about the establishment of asylum seeker centres in their areas seriously. Events in the small town of Oranje in the northern part of the Netherlands are one example of the clash between the established elite and Dutch citizens. The inhabitants blocked entry to the ASC and harassed the secretary of state after he decided, without consulting residents, that Oranje should host twice as many asylum seekers as agreed upon (De Voogt, 2015). As owner of the issue of immigration (Kleinnijenhuis and Walter, 2014), the PVV used its anti-establishment rhetoric to capitalize on the convergence of the two issues, at the expense of the SP. As this convergence came to the fore particularly in places where ASCs were established, we expect people who were exposed to asylum seekers in the neighbourhood to be especially likely to switch to the PVV from political parties that are ideologically close to the PVV on its anti-establishment standpoint (i.e. SP) (Hypothesis 4).

The increased electoral volatility in west European countries in general and the Netherlands in particular (e.g. Drummond 2006; Mair, 2008) has underlined the importance for political parties to mobilize the so-called ‘floating voters’ in order to be successful (Rydgren, 2010). Populist radical right parties are said to be equipped to mobilize and attract this share of the electorate for two reasons—first, because they speak in no uncertain terms about the problems that preoccupy the general public (Immerzeel and Pickup, 2015; Mudde and Rovira Kaltwasser, 2012); and second, because they successfully fuel the idea among the demobilized electorate that it is imperative to attack other political parties fiercely and vocally with respect to these problems (Franklin, 2004; Hooghe, Marien and Pauwels, 2013). During the 2015

refugee crisis, the PVV fiercely and frequently addressed the problems of immigration and the failure of the governing parties to take the concerns of the citizens seriously. We assume that these issues particularly preoccupied the people living where ASCs were being established. We thus expect people who were exposed to asylum seekers in their neighbourhood to be particularly likely to be mobilized by the PVV (Hypothesis 5).

3.3. Data

This study employs individual-level panel data from the 1Vandaag Opinion Panel (1VOP) in the Netherlands. Respondents choose to sign up for this panel, after which they are invited to participate in web surveys by email. Because participation is voluntary rather than based on random selection, there is a self-selection bias in the sample of respondents (Bethlehem, 2010). In our sample the expected groups are indeed somewhat overrepresented. There are more men (than women), more older people (than younger people) and more higher-educated people (than lower-educated people) than in the general population (Statistics Netherlands, 2015a). However, for the purposes of this study, the self-selection bias is not very problematic. Thanks to a uniquely large sample size, we cover a high proportion of groups found within the Dutch population, even though some groups are underrepresented in the sample. More importantly, we exploit the longitudinal design of the survey and focus on within-person changes in voting intentions; each individual therefore acts as his/her own control (i.e. controlling for (un)observed time-invariant confounders).

The first wave of our data was collected in February 2015 and the second wave in November 2015. The period between the two waves spanned that of the high influx of asylum seekers and their subsequent settlement in residential environments across the Netherlands (Figure 3.1). As the focus of our study is on native Dutch individuals, we deleted 1,151 respondents with a non-native Dutch background list-wisely.¹ Of the 26,064 native Dutch respondents who filled out the questionnaire in wave 1, 19,988 respondents also completed the questionnaire in wave 2. Men (in comparison to women), older people (in comparison to younger people) and lower educated (in comparison to higher educated people) were somewhat more likely to participate in wave 2. There was no significant relationship between being exposed to asylum seekers in the local environment, the main focus of our analysis, and the likelihood of participating in wave 2.

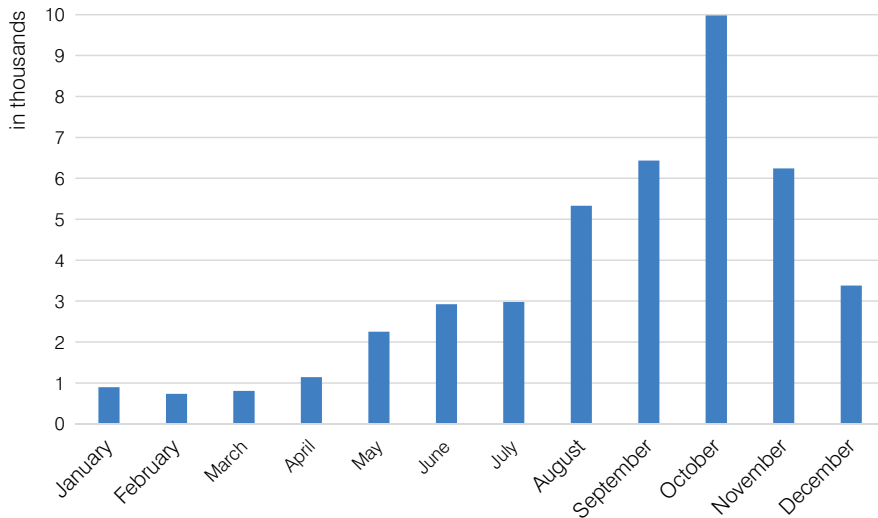
The neighbourhood identifier included in the 1VOP is the four-digit part of the post code, so we enriched our individual-level data with information from the Central Agency for the Reception of Asylum Seekers (COA) about the number of asylum seekers at this level of aggregation.² In the Netherlands, the COA is responsible for housing asylum seekers from the time of their asylum request until they receive a

residence permit or must leave the Netherlands. The COA is an independent administrative body that falls under the responsibility of the secretary of state for the Ministry of Safety and Justice. The ASCs are spread over the whole country. Due to the high influx in 2015, the COA also opened – alongside the regular reception centres – temporary centres and crisis centres to house all asylum seekers. The regular ASCs are used for a period of at least two years and have a capacity ranging from 300 to more than 1,500 people. The temporary ASCs are set up in, for example, former market halls or empty office buildings. They generally house around 300 asylum seekers and are used for a period of six to twelve months.³ From September through December 2015, these normal and temporary ASCs were not sufficient to house all asylum seekers entering the country. The COA therefore opened so-called crisis centres. They used various facilities, such as old school buildings or sport halls already earmarked by the Dutch government for housing citizens in the event of major incidents or disasters. These crisis centres can house from a dozen to several hundred asylum seekers, but only for short periods of up to a few weeks.

The large influx of asylum seekers over the course of 2015 was sudden and relatively unexpected. The local population had no or only limited say in the establishment of ASCs in their neighbourhood. Even local policy makers were restricted in their influence on the settlement of asylum seekers, because the national government prescribed the number that every municipality needed to shelter based on population size.⁴ Although protests of the local population were more intense in some places than in others, and some municipal governments displayed a higher willingness to host asylum seekers than others, we contend that the establishment of ASCs and therefore the exposure to asylum seekers was to a large extent an exogenous process for the local population (see also robustness paragraph below). Moreover, because we assess changes in voting intention in a relatively short period of time – from February to November 2015 – selective residential mobility plaguing neighbourhood effects research in general (Hedman and Van Ham, 2012) is less likely to influence this study's results. We are therefore able to use a natural experiment to evaluate how exposure to asylum seekers in the neighbourhood affects voting intentions for the radical right.

3.3.1. Changes in support for the PVV

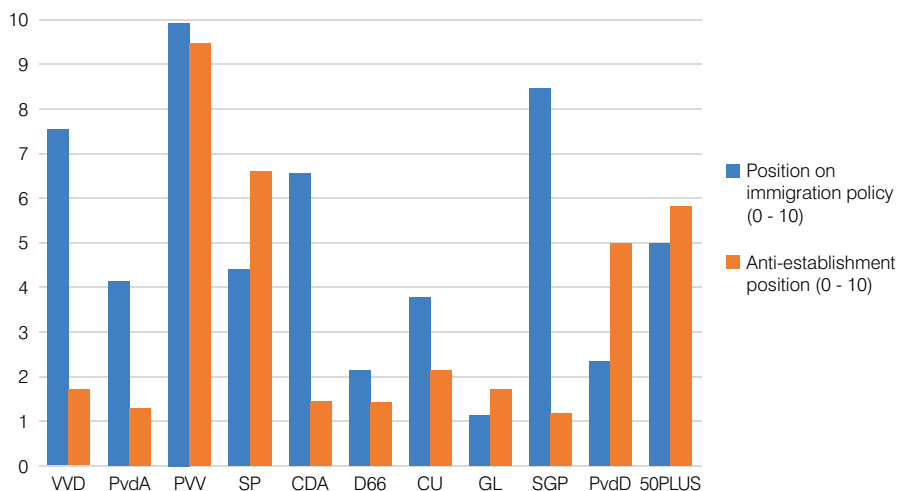
To examine changes in voting intention for the radical right in the Netherlands, we measured respondents' intended voting behaviour at two time points with the following question: 'Which party would you vote for if parliamentary elections were held today?'. The answer categories consisted of the eleven largest political parties represented in the Dutch parliament as well as the option 'another party'. In addition, respondents could also answer 'I don't know', 'blank vote', 'I'm allowed to vote, but I wouldn't', 'I'm not allowed to vote', and 'no answer'. As respondents who answered

Figure 3.1. Number of asylum requests per month in 2015 in the Netherlands

Source: Eurostat (2017)

I don't know', 'blank vote', 'I'm allowed to vote, but I wouldn't' could in one of the two waves be politically mobilized or demobilized and experience respectively a shift towards or a shift away from the radical right, we included these respondents in our analysis as the demobilized electorate. We removed from the analysis the respondents who answered 'I'm not allowed to vote' and 'no answer' in one or both waves.

The used measure of voting intention is operationalized as a nominal variable consisting of five categories: the populist radical right (i.e. PVV), political parties that are ideologically proximal on the issue of immigration (i.e. VVD, CDA, SGP), political parties that are ideologically proximal on the anti-establishment issue (i.e. SP), other political parties (i.e. PVDA, D66, CU, GL, PvdD, 50Plus), and the demobilized electorate. For the creation of this categorization, we used two dimensions on which political parties are positioned from the 2014 the Chapel Hill Expert Survey on party position (Bakker et al., 2015) – the position on immigration policy ranging from 0 (fully opposed to a restrictive policy on immigration) to 10 (fully in favour of a restrictive policy); and the salience of anti-establishment and anti-elite rhetoric ranging from 0 (not important at all) to 10 (extremely important). The PVV scores 9.88 and 9.43 on these items respectively. We coded parties to be proximal to the PVV on these two dimensions if their score exceeded 6 (Figure 3.2).⁵

Figure 3.2. Political parties' positions

Source: Chapel Hill Expert Survey (Bakker et al., 2015)

The changes in voting intentions on the basis of this categorization of political parties between the first and the second time point are summarized in Table 3.1. We note that general support for the radical right increased (from 16.72% to 20.48%) during the 2015 refugee crisis. In line with previous research, we mainly observe intra-bloc volatility. The number of people who switched to the PVV from parties that are either proximal on the issue of immigration or the anti-establishment issue and from the demobilized electorate is higher than the number of people who switched from other parties (6.69%, 8.22%, and 11.69% versus 3.65%). Below we analyse whether the PVV has been successful in attracting significantly more new voters from these party groups than in losing voters to them and, more importantly, whether volatility patterns differ between neighbourhoods with an ASC and those without one.

3.3.2. Exposure to asylum seekers

We measure exposure to asylum seekers in the neighbourhood by the increase in their numbers between the first and second wave. To account for the size of the neighbourhood, we calculate the number of asylum seekers per 1,000 inhabitants. We acknowledge that the exposure to asylum seekers and the impact of this exposure on voting intentions may depend on the type of ASC; there was considerable variation in size and duration of centres (see above). Thus, besides the measure of total relative

Table 3.1. Changes in voting intentions

Time point 1	Time point 2					
	Radical right	Proximal anti-immigration	Proximal anti-establishment	Other political parties	Demobilized electorate	Total
Radical right	frequency	2,859	62	32	122	3,193
	row percentage	89.54	1.94	1	3.82	100
	column percentage	73.1	1.74	1.31	1.88	16.72
Proximal anti-immigration	frequency	246	3,022	21	184	3,678
	row percentage	6.69	82.16	0.57	5.57	100
	column percentage	6.29	84.82	0.86	7.67	19.26
Proximal anti-establishment	frequency	263	42	2,192	395	3,200
	row percentage	8.22	1.31	68.5	12.34	100
	column percentage	6.72	1.18	89.43	6.08	16.75
Other political parties	frequency	233	237	120	5,274	6,378
	row percentage	3.65	3.72	1.88	82.69	100
	column percentage	5.96	6.65	4.9	81.11	33.39
Demobilized electorate	frequency	310	200	86	527	2,651
	row percentage	11.69	7.54	3.24	19.88	100
	column percentage	7.93	5.61	3.51	8.11	13.88
Total	frequency	3,911	3,563	2,451	6,502	19,100
	row percentage	20.48	18.65	12.83	34.04	100
	column percentage	100	100	100	100	100

Source: 1VOP (2015)
Notes: Parties proximal on the anti-immigration issue are VVD, CDA, SGP; party proximal on the anti-establishment issue is SP; other political parties are PvdA, D66, CU, GL, PvdD, 50plus.

exposure to asylum seekers, we also calculate the increase in the number of asylum seekers in regular ASCs, temporary ASCs, and crisis ASCs separately.

3.3.3. Ethnic threat and Interethnic contact

Feelings of ethnic threat are measured with the item: 'I sometimes worry about the fact that my neighbourhood deteriorates because of the arrival of ethnic minorities'. The answer categories are: 0. 'totally disagree', 1. 'disagree', 2. 'agree/nor disagree'/'I don't know/no opinion', 3. 'agree', and 4. 'totally agree'. We measure contact with non-western immigrants with the following question: 'How often do you have personal contact in your neighbourhood with people from non-western descent'. The answer categories to this item are: 0.'never'/'Not applicable', 1.'about once a year', 2.'several times a year', 3.'about once a month', 4.'several times a month', 5.'several times a week', and 6.'(almost) every day'. Personal contact is in this study defined as knowing the other person's name and occasionally talking to this person. Ethnic threat and interethnic contact are included in the analyses as continuous variables.

3.3.4. Missing values and Working sample

We excluded 382 respondents (1.9%) from our sample who did not provide a valid answer on the question on voting intention for one or both waves (i.e. respondents who answered 'I'm not allowed to vote' or 'no answer'). Further, we removed 506 respondents (2.5%) for whom we could not match the contextual information about the exposure to asylum seekers in the local living environment due to missing information on their geographical location. This left us with a working sample of 19,100 respondents in 3,003 four-digit postcode areas (74% of all inhabited postcode areas) in 401 municipalities (99% of all municipalities). Descriptive statistics of our main variables are displayed in Table 3.2.⁶

3.4. Analytical strategy

To test our hypotheses, we employ fixed effects models (cf. Allison, 2009). The influence of all time-invariant characteristics are removed in fixed effects models, allowing us to assess the net effect of being exposed to asylum seekers in the local living environment on individuals' changes in voting intentions. As fixed effects models use only within-person variation, the analyses are based on a reduced sample of the respondents whose voting intentions changed over time (N=4,233). These models tell us what would happen to an individual's voting intention if the exposure to asylum seekers were to increase by one unit, given that these individuals changed their voting intentions between time point 1 and time point 2. Because voting intentions are operationalized as an unordered categorical variable consisting

Table 3.2. Descriptive statistics

	Wave 1				Wave 2			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Contextual variables								
Total exposure to asylum seekers	1.740	15.644	0	691	3.824	23.182	0	689.209
Exposure to asylum seekers in regular ASC	1.652	15.455	0	691	2.044	19.339	0	689.209
Exposure to asylum seekers in temporary ASC	0.088	2.485	0	71	0.860	11.724	0	250.288
Exposure to asylum seekers in crisis ASC	0.000	0.000	0	0	0.920	5.807	0	283.019
Individual-level variables								
Ethnic threat	1.891	1.362	0	4	1.983	1.330	0	4
Interethnic contact	2.481	2.114	0	6	3.584	2.151	1	7

Sources: 1VOP (2015), COA (2015), and Statistics Netherlands (2014)
Notes: These are raw descriptive statistics.

of four groups of political parties and a group of demobilized electorate, we estimate multinomial fixed effects models. To this end, we use the `femlogit` command in Stata 14 (Pfarr, 2014).

3.5. Results

Table 3.3 displays the results based on the multinomial fixed effects models. In the first column we present models in which we constrain all coefficients to be equal across the outcome categories (i.e. groups of political parties and a group of demobilized voters).⁷ The second column displays the unconstrained model. In model 1 we include, besides time (i.e. dummy for wave 2), the total relative exposure to asylum seekers, in model 2 we include the relative exposure to asylum seekers per type of ASC, and in model 3 we include ethnic threat and interethnic contact. Voting intention for the PVV is used as the reference category in all these models, as a consequence of which a negative coefficient indicates a higher likelihood to vote for the PVV relative to any of the other outcome categories.

3.5.1. The impact of the influx of asylum seekers on support for the radical right

In line with the increasing success of the PVV in general election polls over the course of 2015, the negative coefficient for Wave 2 indicates that the odds of voting for the PVV versus all other categories combined have increased over time ($b=-1.118$, $se=0.064$, Model 1, column 1, Table 3.3). We find support for hypothesis 1 that people who have suddenly become exposed to asylum seekers as a result of the establishment of an ASC in their neighbourhood are more likely to switch to the PVV than to switch away from the PVV than people who have not become exposed to asylum seekers. With each unit increase in the exposure to asylum seekers – an increase of one asylum seeker per 1,000 inhabitants – *ceteris paribus*, the odds of voting for the PVV increase by 2.2% ($1/\exp(-0.022)$; Model 1, column 1, Table 3.3). Breaking down of exposure to asylum seekers by type of ASC provides more insight into this relationship. Within neighbourhoods only an increase of exposure to asylum seekers housed in crisis centres is significantly related to people's likelihood to vote for the PVV ($b=-0.028$, $se=0.017$; Model 2, column 1, Table 3.3). However, as the coefficients of all three types of ASCs do not significantly differ from one another, the fact that the parameter estimates referring to the other two types of ASCs do not reach significance is possibly attributable to a lack of power.⁸

People who experience an increase in feelings of ethnic threat are more likely to switch to the PVV. With one unit increase in ethnic threat *ceteris paribus*, the odds of voting for the PVV increase by 30% ($1/\exp(-0.265)$; Model 3, column 1, Table 3.3). Including the

ethnic threat variable does not substantially alter the estimates of exposure to asylum seekers for support for the radical right. Furthermore, an additional fixed effects analysis explaining perceptions of ethnic threat among our sample of party switchers showed that changes in exposure to asylum seekers are unrelated to changes in ethnic threat (not shown). Notwithstanding that ethnic threat is an important explanatory factor for changes in PVV support, we thus do not find any evidence that ethnic threat explains the positive relationship between exposure to asylum seekers and preference for the PVV. We therefore do not find support for hypothesis 2a.

Contact with non-western minorities in the neighbourhood is unrelated to an individual's odds of voting for the PVV (Model 3, column 1, Table 3.3). Looking at the unconstrained model we note that interethnic contact is significantly related to the odds of voting for the PVV versus the other party category and versus being demobilized, though in the opposite direction than expected. People who experience an increase in interethnic contact are more likely to switch to the PVV than to switch away from the PVV than people who did not experience such an increase in contact (Model 3, column 4 and 5, Table 3.3). We thus do not find any evidence that interethnic contact suppresses the positive relationship between exposure to asylum seekers and support for the PVV.⁹ We therefore do not find support for hypothesis 2b.

3.5.2. The pattern of changes in voting intentions for the PVV

To assess to what extent estimates differ for specific voting decisions, we turn to column 2 to 5 of Table 3.3. We performed likelihood-ratio tests between constrained and unconstrained models to evaluate whether estimates are significantly different between specific odds (not shown).

The odds of voting for the PVV in wave 2 versus other right-wing parties (i.e. ideologically proximal on the anti-immigration issue) and versus being demobilized do not significantly differ from the odds of voting for the PVV versus other parties ($b=-0.942$, $b=-0.924$, and $b=-0.911$ respectively, Model 1, column 2, 4 and 5, Table 3.3). The odds of voting for the PVV in wave 2 versus the SP (i.e. other anti-establishment party) are estimated to be significantly higher than the odds to vote for the PVV versus other parties ($b=-2.111$; Model 1, column 3, Table 3.3). More specifically, the odds of voting for the PVV versus the SP are eight times higher in the second wave ($1/\exp(-2.111)$). We conclude that the PVV was especially successful in attracting voters from the SP, at least among voters who did not experience a sudden influx of asylum seekers in their neighbourhood.

To assess the extent to which exposure to asylum seekers affects changes in voting intentions, we compare the coefficient referring to exposure to asylum seekers across outcome categories. The total exposure to asylum seekers is significantly related to the odds of voting for the PVV versus all the outcome categories (Model 1, column 2-5, Table 3.3). These estimates do not significantly differ from one another.

Table 3.3. Multinomial fixed effects models

	Constrained to equality	Right-wing vs PW	Anti- establishment vs PWV	Demobilized vs PW	Other parties vs PW
Model 1					
Wave 2	-1.118*** (0.064)	-0.942*** (0.080)	-2.111***a (0.091)	-0.924*** (0.071)	-0.911*** (0.072)
Total exposure to asylum Seekers	-0.022+ (0.012)	-0.021+ (0.012)	-0.023+ (0.012)	-0.022+ (0.012)	-0.026* (0.012)
Log likelihood	-2736			-2568	
Model 2					
Wave 2	-1.113*** (0.064)	-0.927*** (0.081)	-2.104*** (0.091)	-0.924*** (0.072)	-0.907*** (0.072)
(Ref: wave 1)					
Exposure to asylum seekers in regular ASC	-0.008 (0.014)	-0.003 (0.016)	-0.005 (0.017)	-0.007 (0.016)	-0.019 (0.017)
Exposure to asylum seekers in temporary ASC	-0.056 (0.062)	-0.075 (0.072)	-0.070 (0.067)	-0.055 (0.065)	-0.056 (0.065)
Exposure to asylum seekers in crisis ASC	-0.028+ (0.017)	-0.036+ (0.019)	-0.027 (0.019)	-0.022 (0.018)	-0.033+ (0.018)
Log likelihood	-2735			-2564	

<i>Model 3</i>					
Wave 2					
(Ref: wave 1)					
Exposure to asylum seekers in regular ASC	-1.049*** (0.073)	-0.910*** (0.093)	-2.008*** (0.105)	-0.826*** (0.083)	-0.816*** (0.083)
Exposure to asylum seekers in temporary ASC	-0.008 (0.014)	-0.004 (0.016)	-0.005 (0.016)	-0.007 (0.016)	-0.018 (0.017)
Exposure to asylum seekers in crisis ASC	-0.061 (0.067)	-0.080 (0.077)	-0.079 (0.073)	-0.064 (0.071)	-0.065 (0.071)
Threat	-0.029+ (0.017)	-0.037+ (0.020)	-0.027 (0.019)	-0.022 (0.019)	-0.034+ (0.019)
Contact non-western	-0.265*** (0.059)	-0.207** (0.073)	-0.365*** (0.088)	-0.191** (0.066)	-0.324*** (0.066)
Log likelihood	-0.034 (0.029)	0.003 (0.038)	-0.062 (0.045)	-0.069* (0.033)	-0.056+ (0.034)
				-2545	
				-2724	

Sources: 1VOP (2015), COA (2015).
Notes: 8466 observations for 4233 individuals. Coefficients with standard errors in parentheses. + p<0.10; * p<0.05; ** p<0.01; *** p<0.001 (two-tailed test). ^a Estimate differs significantly from the estimates of the other outcome variables.

Looking at the impact of the exposure to asylum seekers per type of ASC (Model 2, column 2-5, Table 3.3), we note that the exposure to asylum seekers in crisis centres is significantly related to the odds of voting for the PVV versus right-wing parties and the odds of voting for the PVV versus other political parties. However, as the coefficients for none of the outcome categories significantly differ from one another, we conclude that patterns of voting intentions do not depend on exposure to asylum seekers and that hypotheses 3,4 and 5 are not supported.

3.5.3. Robustness analysis: scale of the local environment

To date there has been little to no theorizing on the geographical scale from which to expect an effect of exposure to asylum seekers in particular and of neighbourhood ethnic diversity in general. Presumably, people identify more strongly with, and are more aware of the ethnic composition of a small locality. Residents are, therefore, expected to be most affected by the ethnic composition in their immediate, small scale surroundings (Dinesen and Sønderskov, 2015; Hagendoorn, 2009). To assess whether this is also the case for the exposure to asylum seekers, we compare the results obtained on the basis of the neighbourhoods to the results obtained on the basis of the larger residential areas. Appendix 3 and Appendix 4 display the results based on the multinomial fixed effects models for the local environment operationalized as the neighbourhood combined with the adjacent neighbourhoods, and the local environment operationalized as the municipality respectively.

For residential neighbourhoods combined with adjacent neighbourhoods, we do not find a significant relationship between exposure to asylum seekers and support for the radical right (Model 1 and 2, column 1, Appendix 3). This seems to indicate that the exposure to asylum seekers within the neighbourhood and not within this broader residential environment determines one's odds of voting for the PVV. The picture is, however, somewhat more nuanced. Whereas the total exposure to asylum seekers within municipalities is not related to the odds to vote for the PVV either, the exposure to asylum seekers in temporary centres does play a decisive role in the odds of voting for the PVV ($b = -0.081$, $se = 0.045$; Model 2, column 1, Appendix 4). For every extra asylum seeker in a temporary centre per 1,000 municipal residents, the odds for an individual of voting for the PVV versus voting for any other party or being demobilized increase by 8% ($1/\exp(-0.081)$). We tentatively conclude that whereas people are in their own neighbourhood most affected by the exposure to asylum seekers in crisis centres, people are in their municipality most affected by exposure to asylum seekers in temporary centres. The establishment of the temporary centres, which are used for periods of six to twelve months, is announced at municipality level. The establishment of the crisis centres, which are used for a couple of days to a few weeks, is only communicated to the residents in the direct vicinity of these centres. This may result in a difference in awareness of these ASCs among residents.

3.5.4. Robustness analysis: multinomial hybrid models

We also estimated a multinomial hybrid model on the full sample of respondents, including respondents who did not change their voting intention ($N=19,100$). By decomposing each time-varying predictor into a between-person component (i.e. person-specific mean) and a within-person component (i.e. deviation from person-specific mean), a hybrid panel model examines the impact of time-varying characteristics and time-invariant characteristics simultaneously (cf. Schunck, 2013). We can furthermore control for known time-constant determinants of support for the radical right in this model. At the contextual level, we control for the percentage of non-western minorities and for poverty and neighbourhood decline, using information on the average house price in each neighbourhood (in 1,000 Euros; Statistics Netherlands, 2014e).¹⁰ At the individual level, we control for gender, age (in years) and education (in years). Because the multinomial nature of our dependent variable inhibited the estimation of a true random effects hybrid model, we follow the recommendation of Allison (2009) and use the `mlogit` command with robust standard errors in Stata 14. For reasons of parsimony, we only display results of the full model (equivalent to Model 3 in our main analysis; Appendix 5).

The estimates produced by this model are substantially smaller than the estimates produced by the fixed effects models, as expected (cf. Allison, 2009), but they are in line with our main results. We note that the time-constant control variables are similarly related with radical right voting as found in previous research (e.g., Savelkoul et al., 2017; Rink, Phalet and Swyngedouw, 2009; Lucassen and Lubbers, 2012).¹¹ More importantly, the time-constant estimates of the exposure to asylum seekers are not significant (column 1, Appendix 5). This demonstrates that the average level of exposure to asylum seeker in the neighbourhood across both waves is unrelated to the odds of voting for the PVV, which is an indication that the placement of ASCs is exogenous to people's party preference.

The main (i.e. time-varying) estimates of the exposure to asylum seekers housed in the three types of ASCs are in the expected direction, but they do not reach significance (column 1, Appendix 5). However, the total exposure to asylum seekers is significantly related to the odds of voting for the PVV versus the other outcome categories combined: a one unit increase in exposure to asylum seekers increases the odds of voting for the PVV by 0.1% ($1/\exp(-0.001)$; not shown).

The odds of voting for the PVV versus voting for any other party or being demobilized increase by 12% with a one unit increase in ethnic threat ($1/\exp(-0.114)$; column 1, Appendix 4). An additional hybrid analysis explaining perceptions of ethnic threat demonstrated that changes in exposure to asylum seekers are unrelated to changes in ethnic threat (not shown). Our results based on the hybrid panel models thus confirm our findings based on the fixed effects models.

Similar to the main models, the hybrid model also points to a positive association between interethnic contact and support for the radical right. An increase in contact with non-western minorities is related to a higher odds of voting for the PVV ($b=-0.018$, $se=0.010$); column 1, Appendix 5). At first glance this contradicts contact theory. However, we also find that the average level of contact in a neighbourhood (i.e. time-constant level) is associated with a lower odds of voting for the PVV ($b=0.056$, $se=0.011$, column 1, Appendix 5). These results combined seem to suggest that in general contact with ethnic minorities decreases one's likelihood to support the radical right, but that the increase in contact over the course of the 2015 refugee crisis has been negative contact. In line with our main analysis, an additional hybrid analysis explaining interethnic contact, however, indicated that changes in exposure to asylum seekers are unrelated to changes in interethnic contact (not shown).

Lastly, we note that an increase in exposure to asylum seekers in a regular centre is significantly related to the odds of voting for the PVV versus other parties ($b=-0.004$, $se=0.002$, column 5, Appendix 5), whereas an increase in exposure to asylum seekers in a crisis centre is associated with the odds of voting for the PVV versus a right-wing party and versus other political parties ($b=-0.007$, $se=0.003$ and $b=-0.005$, $se=0.003$, column 2, Appendix 5). The estimates for none of the outcome categories significantly differ from one another. In line with our main analysis, we thus do not find evidence for the idea that patterns of voting intentions depend on exposure to asylum seekers.

3.6. Conclusions

In this study we took a closer look at changes in support for the radical right in the Netherlands against the backdrop of the unprecedented refugee crisis that unfolded in Europe over the course of 2015. As our research design resembled a natural experiment, we had a unique opportunity to expand academic knowledge about the relationship between the presence of ethnic minorities in the local environment and support for the radical right.

People who experienced an increase in exposure to asylum seekers in their neighbourhood were more likely to support the radical right. In line with our expectations, people appear to respond to abrupt, rapid and visible increases in the number of immigrants. Knowing that the empirical evidence for the relationship between the static presence of a non-native population and support for the radical right is mixed (cf. Valdez, 2014; Bowyer, 2008; Coffé et al., 2007; Lubbers and Scheepers, 2002; Lubbers and Scheepers, 2000), we conclude that unforeseen increases in the number of immigrants are more important in explaining anti-immigrant attitudes than the actual size of the non-native population (Ceobanu and Escandell, 2010; Kessler and Freeman, 2005; Olzak, 1992).

Even though we found, in line with previous research (e.g. Lucassen and Lubbers, 2012; Werts et al., 2013), that feelings of ethnic threat were an important driving force for support for the radical right, they did not explain the impact of exposure to asylum seekers on support for the radical right. Surprisingly, our results cautiously pointed to stronger intentions to vote for the radical right among people who experienced an increase in interethnic contact over the course of 2015. This might reflect an increase of negative contact as a consequence of the sudden influx of asylum seekers, which may fuelled instead of suppressed support for the radical right. Regardless, interethnic contact did not explain the found impact of the exposure to asylum seekers on support for the radical right.

As the positive relationship between exposure to asylum seekers and the radical right neither appears to run through interethnic neighbourhood contact nor through ethnic neighbourhood threat, it could be that more general worries about cultural differences or scarcity of jobs and housing, which come to the fore at the national instead of the neighbourhood level, are more salient in areas where people are exposed to asylum seekers than in areas where they are not. A promising direction for future research would be to assess whether more direct measures of issue saliency in neighbourhoods or feelings of threat at the national level could explain the impact of exposure to asylum seekers on the odds of voting for the radical right.

By bringing together the study fields of the success of the radical right and of voting preferences, our final aim was to identify the political parties from which the radical right attracted new supporters and whether the found pattern of changed voting intentions was dependent on exposure to asylum seekers in the neighbourhood. The PVV was successful in attracting voters from all types of parties, but especially from the socialist party SP, which shares its anti-establishment rhetoric. As owner of the issue of immigration (Kleinnijenhuis and Walter, 2014), the radical right used its anti-establishment rhetoric to capitalize on the convergence of the immigration and anti-establishment issue during the 2015 refugee crisis, at the expense of the socialist party. We did not find any evidence that for people who were exposed to asylum seekers, specific alternatives to the PVV became more or less attractive. As we know that voting intentions are not the same as actual voting behaviour (Rogers and Aida, 2011), it is unfortunate that we had to rely solely on voting intentions in this study. Even though we thus have to be careful in drawing definite conclusions about changes in voting behaviour, our study demonstrates that an increased exposure to asylum seekers boosts voters' support for the radical right.

In sum, with respect to *whether* diversity affects cohesion this chapter showed that residents who are suddenly and unexpectedly exposed to asylum seekers in their neighbourhoods and thus to more diversity are more likely to vote for the radical right and thus display less cohesion. Neither the threat or contact mechanism could explain *why* this relationship exists, even though residents who experienced an

increase in ethnic threat and to a lesser extent in interethnic contact are shown to be more attracted to the rhetoric of the radical right. New supporters for the radical right come from all other political parties, but especially from the socialist party. This was not dependent on whether these former supporters for the socialist party were exposed to asylum seekers in their residential environment. Lastly, with respect to *where* diversity affects cohesion, the robustness analyses tentatively indicated that the awareness of the ethnic composition and changes thereof vary according to specific circumstances, as people are in their own neighbourhood most affected by the exposure to asylum seekers in crisis centres, whereas people are in their municipality most affected by exposure to asylum seekers in temporary centres.

Chapter notes

1. We define being native Dutch as those respondents whose parents were Dutch, or respondents who identified with the Netherlands in case one parent was non-Dutch.
2. In the Netherlands, complete post codes are combinations of four digits and two letters (e.g. 1011AB), resembling small parts of a specific street. The median surface area of these neighbourhoods is 5.3km² and they are, on average, inhabited by 4,000 people.
3. There is substantial variation in the size of these temporary ASCs. The temporary ASC Heumensoord (municipalities concerned: Heumen and Nijmegen) for example housed 3000 asylum seekers.
4. The law '*Huisvestingswet 2014*', retrieved from <http://wetten.overheid.nl/BWBR0035303/2017-01-01>.
5. In robustness analyses we excluded the SGP from the category of parties close to the PVV on the immigration issue, because the SGP is distinct due to its extremely religious character, and we included 50plus in the category of parties close to the PVV on the anti-establishment issue, because it scores reasonably high on this dimension in the Chapel Hill Expert Survey as well (Figure 3.2). These analyses led to findings similar to the ones presented in the article.
6. The descriptive statistics of individual-level sociodemographic variables, such as gender, age, and education, will not be publicly disclosed at the request of the owners of the 1VOP panel.
7. The obtained coefficients are similar to the coefficients extracted from fixed effects models with a binary outcome for the intention to vote for the PVV.
8. We used the T-statistic: $T = (a - b) / SE(a - b)$, where $SE(a - b) = \sqrt{VAR(a) + VAR(b) - 2COV(a,b)}$.
9. As an additional fixed effects analysis explaining contact with non-western minorities among our sample of party switchers furthermore showed that changes in exposure to asylum seekers are unrelated to changes in contact with non-western minorities (not shown), we neither find evidence that interethnic contact explains the positive relationship between exposure to asylum seekers and support for the PVV.
10. Following the definition of Statistics Netherlands, people are considered to be non-western immigrants when at least one of their parents was born in a non-western country. The percentage of non-western minorities ranges from 0% to 58% (mean=11%). The average house price ranges 28 to 943 (mean=208). We recoded the measure of poverty and neighbourhood decline, so that a higher score corresponds to a higher degree of poverty and neighbourhood decline. The odds of voting for the PVV are estimated to be lower for higher educated, women and older people. The economic status of the neighbourhood is only negatively and significantly related to support for the radical right as long as we do not control for neighbourhood composition effects (not shown). Once we control for ethnic threat, the number of non-western ethnic minorities is negatively related to support for the radical right. Uncontrolled for ethnic threat, the presence of ethnic minorities is positively related to the odds of voting for the PVV.



4

SIZE IS IN THE EYE OF THE BEHOLDER: HOW DIFFERENCES BETWEEN NEIGHBOURHOODS AND INDIVIDUALS EXPLAIN VARIATION IN ESTIMATIONS OF THE ETHNIC OUTGROUP SIZE IN THE NEIGHBOURHOOD*

* A slightly different version is currently under review at an international journal
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4.1. Introduction

As a consequence of ongoing immigration over recent decades, western societies have become increasingly diverse in terms of people's ethnic background. This process of diversification has triggered a heated political debate in many western countries about the possible threats posed by ethnic heterogeneity to the wellbeing of their societies (Wickes, Hipp, Zahnow and Mazerolle, 2013). In the last few years this debate has also become a central theme in academic research. Social scientists have investigated whether, and under what conditions, high numbers of ethnic minorities in a given environment have negative consequences for social cohesion. There is, however, still little consensus on the impact of the actual (objective) ethnic outgroup size (Van der Meer and Tolsma, 2014). Research focusing on the impact of the perceived (subjective) ethnic outgroup size on social cohesion has, on the other hand, consistently demonstrated a negative relationship with social cohesion (e.g. Hipp and Wickes, 2016; Piekut and Valentine, 2016; Hooghe and Vroome, 2015; Schaeffer, 2014b). Accordingly, it is important to find a better understanding of how perceptions of the ethnic outgroup size are constructed. We therefore set out to answer under which circumstances people perceive more ethnic minorities in their neighbourhood and under which circumstances people are more likely to overestimate the size of the ethnic outgroup in their neighbourhood.

About 12% of the Dutch population has a non-western migrant background and about 10% has a western migrant background (first and second generation). The largest groups with a non-western background are Moroccan-Dutch (19%), Turkish-Dutch (20%), Surinamese-Dutch and Antillean-Dutch (25%). People with roots in Germany and Belgium are traditionally among the largest groups with a western background (together they constitute 30% of the population with a western background). From 2004 onwards, migration from eastern European countries has increased rapidly. Nowadays, people with roots in Poland, former Yugoslavia, former Soviet Union, Bulgaria and Romania make up about 20% of the population with a western background (Statistics Netherlands, 2014c). There is considerable ethnic segregation between municipalities and within municipalities between neighbourhoods (Tolsma and Van der Meer 2016). The question is whether this is also perceived as such.

Existing studies focussing on the perceived ethnic outgroup size examined individuals' estimations of the ethnic outgroup size either at the national level (e.g. Strabac, 2011; Herda, 2010; Semyonov, Raijman and Gorodzeisky, 2008; Sigelman and Niemi, 2001; Alba, Rumbaut and Marotz, 2005) or at the large regional level (e.g. Semyonov, Raijman, Yom Tov and Schmidt, 2004). Even though individuals' perceptions of the ethnic outgroup size are not totally disjoined from reality, these studies consistently showed that people tend to overestimate the ethnic outgroup size at both the national and large regional level. Researchers have explained this

finding by contending that estimations of the ethnic outgroup size at the country level, or at the large regional level, are often based on people's everyday experience (Nadeau, Niemi and Levine, 1993). Individuals tend to generalize the situation in their local social context, when asked to make an assessment of the sizes of different ethnic groups at the national or large regional level. Given the presumed importance of the local context, we turn in this study to explaining perceptions of the neighbourhood ethnic outgroup size.

We asked native Dutch people ($N=24,538$) to make an estimation of the size of the total ethnic minority population in their neighbourhood. In line with the above mentioned previous studies, we expect that native Dutch people will, on average, be capable of making fairly realistic estimations of the size of the ethnic outgroup in their own local residential environment. However, they are likely to be more aware of non-western minorities than of western minorities in their living environment, because they can be more easily distinguished by skin colour and cultural behaviours. In this study it is our aim to explain why average perceptions and the likelihood to overestimate the ethnic outgroup size differ between neighbourhoods and why residents of the same neighbourhood differ in how ethnic minorities are perceived and why some residents are more likely to overestimate the ethnic outgroup size than others. Furthermore, we will investigate whether actual (objective) sizes of western and non-western minorities contribute equally to the (over)estimations of the ethnic outgroup size as a whole.

With respect to between-neighbourhood variations, we argue that, besides the actual ethnic outgroup size in a neighbourhood, ethnic segregation, economic deprivation and the prevalence of crime may affect perceptions of the ethnic outgroup size. Furthermore, neighbourhoods are no islands and are inevitably related to surrounding areas and form part of larger municipalities (Sampson, 2012). Differences in perceptions of the outgroup size between neighbourhoods may therefore stem partly from variations in the ethnic, economic and crime composition of surrounding areas. But even people living in the same neighbourhood may perceive their residential environment differently (Harding et al., 2011), because perceptions are shaped by social position (Sampson, 2012). We argue that interethnic contact and feelings of ethnic threat are also likely to be related to how the ethnic outgroup size is perceived.

In sum, this chapter addresses the *why*-question by exploring how individuals' perceptions of ethnic diversity, which may function as an explanatory pathway for the diversity-cohesion relationship, are shaped by the characteristics of the residential environment, of surrounding residential environments, and by interethnic contact and ethnic threat. To test our expectations we employ contextual-level data from Statistics Netherlands and individual-level data for native Dutch individuals extracted from the 1Vandaag Opinion Panel, a unique survey carried out among 24,538 respondents.

With this dataset, we are able to investigate perceptions of the ethnic outgroup size across the country, covering all municipalities and more than 75% of all neighbourhoods in the Netherlands.

4.2. Theoretical Expectations

4.2.1. Neighbourhood context and perceptions of the ethnic outgroup size

We focus on three neighbourhood characteristics that – after taking into account the actual ethnic outgroup sizes – may affect native Dutch' perceptions of the ethnic outgroup size: ethnic segregation, economic deprivation and the prevalence of crime.

First, ethnic segregation – the spatial component of a neighbourhood's ethnic composition – could 'markedly enhance the visibility of a group, it makes them seem larger' (Allport, 1954:269). If native Dutch individuals live close to, but separated from members of ethnic outgroups, the awareness of differences between themselves and ethnic minorities may increase (Van der Waal, De Koster and Achterberg, 2013; Kaplan and Douzet, 2011; Gallagher, 2003). This increased awareness of the ethnic outgroup results in the expectation that the perceptions of the ethnic outgroup size are higher in ethnically segregated neighbourhoods than in ethnically integrated neighbourhoods. Following this reasoning further, one would expect that people are more likely to overestimate the number of ethnic minorities in ethnically segregated neighbourhoods than in ethnically integrated neighbourhoods.

Historically and structurally induced inequality in affluence exists between native Dutch and non-western ethnic minorities, with native Dutch being, on average, more affluent (Statistics Netherlands, 2014b). Of the western minorities, only the western minorities who recently migrated from eastern Europe are less affluent than native Dutch but economic inequality runs less deep between these eastern European minorities and native Dutch than between non-western minorities and native Dutch (Statistics Netherlands, 2014d). We assume that this pattern of economic inequality along ethnic lines has given rise to ethnic stereotypes among native Dutch linking ethnic minorities – especially non-western minorities – to poverty. Evidence for the existence of such stereotypes is found in the USA, where studies have shown not only that people perceive the poor as predominantly black (Gilens, 1996; Farley et al., 1994), but also that media outlets portray poor people more often as black than is the case in reality (Gilens, 2004; 1996). Similarly, research in Sweden and Denmark provides some indication to the overrepresentation of non-whites as being poor in the media in Europe as well (Larsen and Dejgaard, 2013). Economic neighbourhood deprivation may make such stereotypes linking ethnic minorities to poverty more salient. Consequently, we expect that estimations of the ethnic outgroup size – and

especially of non-western minorities – are higher in economically deprived neighbourhoods than in affluent neighbourhoods (cf. Quillian and Pager, 2001; Quillian, 1995). Additionally, we expect that people are more likely to overestimate the number of ethnic minorities in economically deprived neighbourhoods.

Research in the USA shows that a strong perceptual association between race and crime exists, beyond any actual association between the two (Quillian and Pager, 2010; 2001). The presence of black Americans in a neighbourhood is, for example, positively associated with individuals' overestimations of crime rates (e.g. Pickett, Chiricos, Golden and Gertz, 2012; Quillian and Pager, 2001; Skogan, 1995). Research conducted in Europe also indicates the existence of a persistent cognitive association between ethnic minorities and crime. In the media, ethnic minorities are, for example, more likely to be connected to crime than natives (e.g. Jacobs, 2017; El Refaie, 2001). Hooghe and Vroome (2016) further show for Belgium that fear of crime is related to the presence of non-EU nationals, whereas it is unrelated to the actual crime rates. In the Netherlands, public opinion surveys also demonstrate that people not only associate the presence of non-western ethnic minorities, but also the presence of western ethnic minorities with crime (Dagevos and Gijsberts, 2013; Junger-Tas, 1997). In part these stereotypes may stem from official crime statistics in which non-western ethnic minorities are overrepresented (Blom, Oudhof, Bijl and Bakker, 2005) and which show that the number of crime suspects from eastern Europe has increased over the last decade (Statistics Netherlands, 2015b). We assume, however, that ethnic stereotypes linking ethnic minorities to crime among native Dutch will exist beyond any factual association between the two, as they do in the USA and other European countries. Because of these ethnic stereotypes, we expect that in high crime neighbourhoods perceptions of the ethnic outgroup size are higher than in neighbourhoods with less crime. Relatedly, we expect that people are more likely to overestimate the number of ethnic minorities in high crime neighbourhoods.

4.2.2. Adjacent neighbourhoods and perceptions of the ethnic outgroup size

Neighbourhoods are both connected and related to those surrounding them (Sampson, 2012). People not only notice ethnic minorities in their own neighbourhood, but also in adjacent neighbourhoods when they go shopping, run errands, or commute to work and school. What they observe in surrounding areas is likely to affect perceptions of ethnic group sizes in their own neighbourhood. So far, research has only demonstrated the converse effect – namely, that people use their local day-to-day experiences to estimate ethnic group sizes at the national level (e.g. Strabac, 2011; Herda, 2010; Alba et al., 2005). Contrarily, we expect that people use their experiences in the broader residential environment to estimate the ethnic outgroup size in their

own neighbourhood. Such a spill-over effect may lead to a relationship between the presence of ethnic minorities in adjacent neighbourhoods and people's perceptions of the ethnic outgroup size in their own neighbourhood.

We expect that people will not only be aware of the presence of ethnic minorities in adjacent neighbourhoods, but also of other conditions of these neighbourhoods. Similar to the presence of ethnic minorities in adjacent neighbourhoods, we therefore expect that spill-over effects may lead to an association between segregation, deprivation and crime in adjacent neighbourhoods and people's perceptions of the ethnic outgroup size in their own residential neighbourhood.

4.2.3. Threat, contact and perceptions of the ethnic outgroup size

Existing research shows that higher-educated and older people are more likely to perceive fewer ethnic minorities and are less likely to overestimate the ethnic outgroup size than lower-educated and younger people, because they possess, on average, more political and societal knowledge (Wong, Bowers, Williams and Drake, 2012; Sigelman and Niemi, 2001). Unemployed people and people with children are more likely to perceive more ethnic minorities and are more likely to overestimate the ethnic outgroup size in the neighbourhood than those in employment or without children, because they spend, on average, more time in the neighbourhood (Forrest, 2008; Henning and Lieberg, 1996). We expand this knowledge of individual features by examining two under-investigated factors: interethnic contact experiences and ethnic threat.

Previous research has demonstrated that people are likely to estimate higher frequencies of events when their recollections of them are vivid (Reber, 2004). We assume that recollections of ethnic minorities in a neighbourhood are more salient when native Dutch individuals have contact with them more frequently (Herda, 2010). Therefore, we expect that people who interact with ethnic minorities in their neighbourhood perceive more ethnic minorities and are more likely to overestimate the size of the ethnic outgroup than people who do not interact with them.

Native Dutch who view ethnic minorities as competitors for economic resources or as a threat to Dutch culture are likely to be more sensitive to the presence of ethnic minorities in their neighbourhood than people who do not feel ethnically threatened (Bobo, 1988; Sears, 1988). Feelings of ethnic threat and higher estimations of the size of the outgroup – and consequently overestimating the outgroup size – are therefore likely to be related.

4.3. Methods

4.3.1. Data

This study employs individual-level data from the 1Vandaag Opinion Panel (1VOP) in the Netherlands. The overall sample consists of 25,774 respondents. As the focus of our study was native Dutch individuals, we deleted 984 respondents with a non-native Dutch background list-wisely, leaving us with a sample size of 24,790.¹ The 1VOP data was collected in February 2015 in a web survey. Respondents could volunteer for this opinion panel, after which they were invited to participate in the web survey by email. Participating in survey studies voluntarily often reflects an inherent bias in respondents (Bethlehem, 2010). In our sample we indeed found that some groups were overrepresented. There were more men (than women), more older people (than younger people) and more higher-educated (than lower-educated people) than in the general population (Statistics Netherlands, 2015a). To account for the unequal selection probabilities for these groups and consequently obtain unbiased standard errors, we included individual-level sampling weights for these characteristics in our analyses.

We defined neighbourhoods as areas distinguished by the four-digit part of the postcodes, because the geographical identifiers at the individual level are provided at that level.² The median surface area of neighbourhoods is 5.3km² and they are, on average, inhabited by 4,000 people. As Statistics Netherlands does not offer contextual information for these neighbourhoods directly, we constructed neighbourhood characteristics on the basis of grid data (0.01km² grid cells; Statistics Netherlands, 2014e). We aggregated this grid data to construct neighbourhood-level measures. The prevalence of crime in the neighbourhood was based on official police reports (HKS) obtained from the Dutch National Police Services (KLPD).

We had to disregard 252 respondents (1% of our sample), because they either did not provide a correct postcode, or because there was no information available about the contextual characteristics of their 4-digit postcode area, or in the adjacent 4-digit postcode areas. The final sample consisted of 24,538 respondents living in 3,113 neighbourhoods of all 4,044 neighbourhoods in the Netherlands, which gave us a uniquely high coverage of neighbourhood diversity.

4.3.2. Measures

4.3.2.1. Dependent Variables

To measure *perceptions of the ethnic outgroup size* in a neighbourhood – the first dependent variable in this study – we used individuals' estimations of the ethnic outgroup size, asking: 'What percentage of the people living in your neighbourhood belong to an ethnic minority group?' If respondents did not know the exact percentage,

they were asked to provide an estimation (between 0% and 100%). We thus asked our respondents about ethnic minorities in general, without making a distinction between western and non-western ethnic minorities. We prefer this raw measure of estimations of the ethnic outgroup size over a difference score between the perceived outgroup size and the actual outgroup size, because it allows us to disentangle the possibly differential influence of the presence of western and non-western minorities in shaping the perceptions of the ethnic outgroup size as a whole.

To measure *overestimation of the ethnic outgroup size* in the neighbourhood – the second dependent variable in this study – we assigned the score '1' to all overestimations and the score '0' to all other estimations.³ We measured the overestimations of the ethnic outgroup size by subtracting the summed objective percentage of the non-western and western minorities from individuals' estimations of the ethnic outgroup size.

To reduce individual variation in understanding of what constitutes a neighbourhood, we supplied respondents with the following definition: a neighbourhood is the area that can be reached on foot in fifteen minutes from your own house. This corresponds roughly to a surface area of 4.5km² (an area with a radius of 1.2km).

4.3.2.2. Contextual Variables

Ethnic outgroup size refers to the ethnic outgroup sizes of western and non-western minorities for all 4-digit postcode areas. Following the definition of Statistics Netherlands, people are considered to be either western or non-western ethnic minorities when at least one of their parents was born in either another western, or a non-western country. In our study, percentages of non-western minorities range from 0% to 67.6% (unweighted mean=9.6%). The percentages of western minorities range from 0% to 48.3% in the neighbourhoods in which our respondents reside (unweighted mean=9.2%).

Ethnic segregation is measured using a multi-group dissimilarity index. This index may be seen as an indication of how the ethnic composition of subunits of the neighbourhood differ (on average) from the ethnic composition of the whole neighbourhood (Reardon and Firebaugh 2002). We differentiate between native Dutch, western minorities and non-western minorities, and use 100m² areas as subunits of a neighbourhood. Constructed intra-neighbourhood ethnic segregation scores range from 0 to 96 (mean=33.31, median=32.34). In the US, scores below 30 on this dissimilarity index are considered to be low, scores between 30 and 60 moderate, and scores above 60 high (Logan and Stults 2011). So, most neighbourhoods in our sample are, according to this rule of thumb, moderate in their ethnic segregation.

Economic deprivation was measured using average house values (so-called WOZ values) in the area (per 10,000 Euros). This measure ranges in our sample from 3.27 to 94.29 (mean=20.77, median=20.08). We multiplied this measure by -1 so that a higher score corresponded to a higher degree of economic deprivation. At the

neighbourhood level (i.e. 4-digit postcode area), we do not have other indicators of economic deprivation at our disposal. Average housing value is theoretically a good indicator of neighbourhood deprivation, because it is not only a direct expression of the condition of the built environment, but also an indirect expression of the socio-economic composition of its residents. Moreover, empirically, the correlation at the municipality level between the average house value and residents' average income, an often used indicator of economic deprivation, is high (Pearson's correlation = 0.74).

Crime rate was measured as the number of suspects living in the neighbourhood per 1,000 inhabitants, averaged over the years 2009, 2010 and 2011. This information was based on official police reports (HKS) obtained from the Dutch National Police Services (KLPD). About 90% of all suspects registered in the HKS are prosecuted, or have their cases settled out of court by the public prosecutor. Crime rates range in our sample from 0.18 to 68.35 (mean=10.80). We do not have access to actual neighbourhood crime rates (e.g. burglaries/robberies) but as previous research has established that most offenders commit crimes not far from their homes (e.g. Brantingham and Brantingham, 1982), we argue that the number of offenders in a neighbourhood serves as a fair equivalent for the local crime rate. Moreover, the correlation at the municipality level between our measure of crime and the rate of visible and geographically bounded crime types (i.e. thefts, burglaries, vandalism, destruction of property and violation of public order) is high (Pearson's correlation = 0.76). If anything, with our measure we are likely to underestimate the impact of crime on perceptions of the ethnic outgroup size.

An *adjacent area* is defined as a neighbourhood that shares at least one (part of a) boundary with a respondents' residential neighbourhood (i.e. queen contiguity). For these adjacent areas, we determined the size of the non-western and western minority population, the degree of ethnic segregation, the degree of economic deprivation and the crime rate in a similar fashion as we measured these characteristics for people's residential neighbourhood.

4.3.2.3. Individual-level Variables

Contact with ethnic minorities was measured by the two following questions: 'How often do you have personal contact in your neighbourhood with (1) people of non-western descent and (2) people of eastern European descent?' Answer categories for these items were: 'never/not applicable' (0), 'about once a year' (1), 'several times a year' (2), 'about once a month' (3), 'several times a month' (4), 'several times a week' (5), '(almost) every day' (6). Personal contact is in this study defined as knowing the other person's name and occasionally talking to this person. *Ethnic threat* was measured with the statement: 'I sometimes worry that my neighbourhood is deteriorating because of the arrival of ethnic minorities.' Answer categories are: 'totally disagree' (0), 'disagree' (1), 'agree/nor disagree'/'I don't know/no opinion' (2),

'agree' (3), 'totally agree' (4), and 'I don't know/no opinion'. Interethnic contact and ethnic threat are included in the analyses as continuous variables.

We further include respondents' age and educational level. Age was calculated on the basis of date of birth. *Education* was measured in years. Furthermore, we include a measure for people's main *daily activity* via the following categories: 'employee/self-employed', 'looking for work', 'unable to work', 'student', 'housewife/house-husband', 'pensioner', 'other' and a measure for *having children* via dummy variable with being a parent coded as 1 and having no children as 0. We additionally control for *gender* with males coded as 1 and females as 0.

The descriptive statistics for our main variables can be found in Table 4.1.⁴

Table 4.1. Descriptive statistics.

	Mean	SD	Min	Max
<i>Dependent variables</i>				
Perceived ethnic outgroup size	13.34	16.01	0	100
Overestimations of the ethnic outgroup size	0.23		0	1
<i>Independent variables</i>				
% non-western minorities	9.64	9.76	0	67.62
% western minorities	9.21	4.27	0	48.31
Ethnic segregation	33.31	8.44	0	95.98
Economic deprivation (housing value*10,000)	20.77	6.36	3.27	94.29
Crime rate (per 1000 inhabitants)	10.80	5.78	0.18	68.35
% non-western minorities (adj.nbs)	9.97	8.72	0	63.30
% western minorities (adj.nbs)	9.05	3.69	0.27	37.46
Ethnic segregation (adj.nbs)	19.46	8.36	1.10	85.54
Economic deprivation (adj.nbs)	20.28	5.34	4.45	56.05
Crime rate (adj.nbs)	11.42	7.63	1.93	166.69
Contact non-western minorities	2.51	2.12	0	6
Contact western minorities	1.43	1.88	0	6
Ethnic threat	1.85	1.36	0	5

Sources: 1VOP (2015); Statistics Netherlands (2014).

Notes: $N_{\text{individual}}=24,538$; $N_{\text{neighbourhood}}=3,113$; these are raw descriptive statistics (i.e. unweighted)

4.3.3. Statistical Analyses

The first dependent variable, perceptions of the ethnic outgroup size, may be interpreted as a count variable, namely individuals' counts of how many of 100 random neighbourhood residents belong to an ethnic minority group. We assume these counts are drawn from a negative binomial distribution.⁵ Negative binomial models describe the probabilities of the occurrence of counts greater than or equal to 0, while accounting for overdispersion in the variance of these counts. The form of our model equation is:

$$Ln (dep1_i) = x'_i\beta \quad (1)$$

where **dep 1** is (the estimation of) our observed dependent variable, perceptions of the ethnic outgroup size, β the vector of estimated parameters and x' the observed predictors. To test our hypotheses with respect to our second dependent variable, the overestimation of the ethnic outgroup size, we estimate logistic regression models (assuming a standard logistic distribution of errors), with the following model equation form:

$$Ln \left(\frac{P (dep2_i = 1)}{1 - P (dep2_i = 1)} \right) = x'_i\beta \quad (2)$$

The predictors referring to the objective proportions of western and non-western ethnic minorities are first logged before they enter the model equations 1 and 2 to increase model fit and to ease interpretation of the results.⁶

Because our respondents are nested in neighbourhoods, we employ multilevel analyses (Snijders and Bosker 1999). Following the recommendations of Carle (2009), we scaled our individual-level sampling weights so that the new weights summed to the level-2 cluster (neighbourhood) sample size.

Table 4.2 displays the results, both the beta-coefficients and the incidence rate ratio (IRR), for the first dependent variable: perceptions of the ethnic outgroup size. Figures 4.1 through 4.5 show the predicted values for this first dependent variable at different levels of the percentages of non-western and western minorities, of economic deprivation, of crime and of interethnic contact and perceived threat. Table 4.3 displays the results, both the beta-coefficients and the odds ratios (OR), for the second dependent variable: overestimations of the ethnic outgroup size.

4.4. Results

In Model 1 in Table 4.2 we only included the actual percentages of non-western and western minorities to assess the relative importance of these groups in explaining the perceived ethnic outgroup size. The presence of non-western minorities in the neighbourhood is more strongly related to the perceived ethnic outgroup size than the presence of western minorities in the neighbourhood. The incidence rate ratio indicates that the (expected) perceived size of the ethnic outgroup is multiplied by a factor of 2.108 when the natural logarithm of the percentage of non-western minorities increases by one unit, whereas it is multiplied by only 1.133 when the natural logarithm of the percentage of non-western minorities increases by one unit.

The left panel of Figure 4.1 in which we plotted predicted values based on the estimates of Model 1 in Table 4.1 shows that, assuming the size of the western population to be zero, native Dutch are quite well in registering the increases in the number of non-western minorities. Before the percentage of non-western minorities reaches twenty percent, people only slightly overestimate the size of the minority population. In neighbourhoods where the percentage of non-western minorities is higher than twenty percent, people underestimate the size of the minority population somewhat. The right panel of Figure 4.1 shows that native Dutch are less able to register the increases in western minorities. Regardless of the actual percentage of western minorities, native Dutch' perceptions of the ethnic outgroup size do not exceed the three percent in neighbourhoods without non-western minorities. Thus, native Dutch are more perceptive of increases in non-western minorities than of increases in western minorities.

This is further corroborated by our second set of analyses, in which we explain overestimation of the ethnic outgroup size (Model 1, Table 4.3). The presence of non-western minorities is positively associated with the likelihood of overestimating the total ethnic outgroup size, whereas the presence of western minorities is negatively associated with the likelihood of overestimating the total ethnic outgroup size. More specifically, we observe that each one unit increase in the (natural logarithm of) the actual percentage of non-western minorities increases the odds of overestimating the total ethnic outgroup size by 200% ($OR=2.000$, $se=0.084$). The odds to overestimate the total ethnic outgroup size becomes approximately 3 times smaller with each one unit increase in the (natural logarithm of) the actual percentage of western minorities ($OR=0.305$, $se=0.027$). The presence of non-western minorities – and not the presence of western minorities – in the neighbourhood is thus a decisive factor in explaining overestimation of the ethnic minority population.

Table 4.2. Multi-level negative binomial regression models explaining individuals' perceptions of the ethnic outgroup size

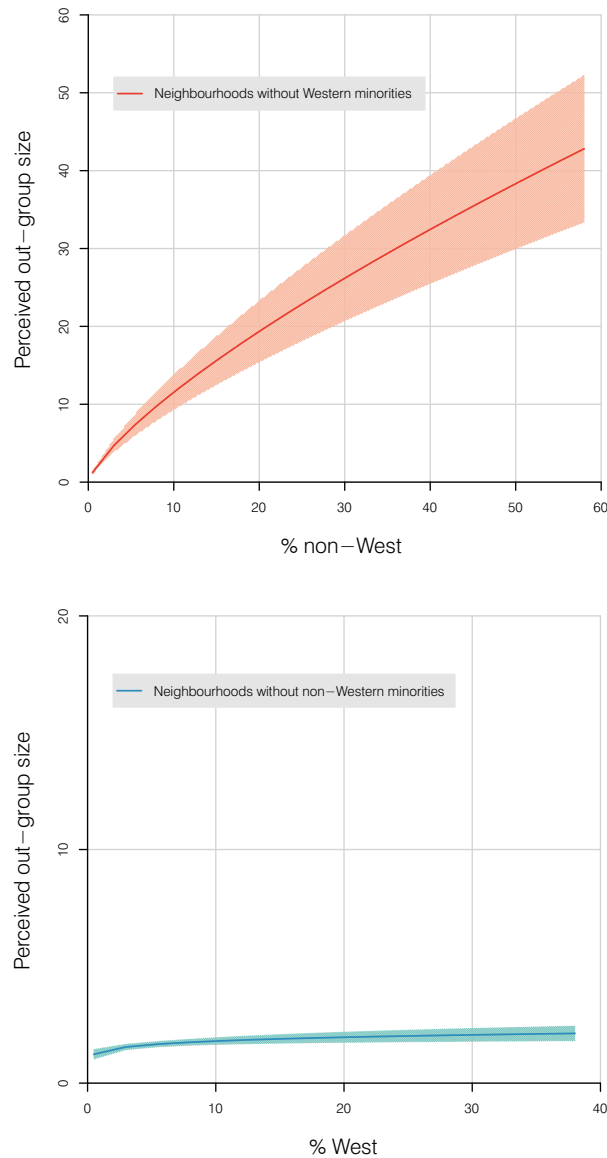
	Model 1		Model 2		Model 3		Model 4	
	B (se)	IRR (se)	B (se)	IRR (se)	B (se)	IRR (se)	B (se)	IRR (se)
Ln (% non-west)	0.746*** (0.016)	2.108*** (0.033)	0.685*** (0.020)	1.984*** (0.039)	0.624*** (0.027)	1.866*** (0.050)	0.550*** (0.025)	1.733*** (0.043)
Ln (% west)	0.125** (0.039)	1.133** (0.044)	0.098* (0.050)	1.103* (0.055)	0.015 (0.076)	1.015 (0.077)	0.011 (0.072)	1.011 (0.072)
Ethnic segregation			-0.003 (0.002)	0.997 (0.002)	-0.002 (0.002)	0.998 (0.002)	-0.000 (0.002)	1.000 (0.002)
Economic deprivation			0.006** (0.002)	1.006** (0.002)	0.011*** (0.003)	1.011*** (0.003)	0.007** (0.002)	1.007** (0.002)
Crime rate			0.011*** (0.003)	1.011*** (0.003)	0.009** (0.003)	1.009** (0.003)	0.007** (0.002)	1.007** (0.002)
Ln (% non-west adjacent nbs)					0.103*** (0.031)	1.109*** (0.034)	0.088** (0.028)	1.091** (0.031)
Ln (% west adjacent nbs)					0.149+ (0.079)	1.161+ (0.092)	0.151* (0.074)	1.164* (0.086)
Ethnic segregation (adjacent nbs)					0.001 (0.002)	1.001 (0.002)	-0.000 (0.001)	1.000 (0.001)
Economic deprivation (adjacent nbs)					-0.006+ (0.003)	0.994+ (0.003)	-0.004 (0.003)	0.996 (0.003)
Crime rate (adjacent nbs)					-0.000 (0.001)	1.000 (0.001)	-0.000 (0.001)	1.000 (0.001)
Contact non-western							0.091*** (0.005)	1.095*** (0.006)
Contact western							0.022*** (0.006)	1.022*** (0.006)
Ethnic Threat							0.212*** (0.007)	1.236*** (0.009)

Gender (REF: Female)	-0.062** (0.020)	0.940** (0.019)
Age (in years)	-0.009*** (0.001)	0.991*** (0.001)
Education (in years)	-0.014*** (0.003)	0.986*** (0.003)
Kids (REF: no kids)	-0.043+ (0.026)	0.958+ (0.024)
Daily activity (REF = Working)		
Daily activity (Looking for work)	0.068 (0.049)	1.070 (0.053)
Daily activity (unable to work)	0.119** (0.036)	1.126** (0.041)
Daily activity (Student)	-0.028 (0.071)	0.972 (0.069)
Daily activity (House wife/husband)	-0.008 (0.049)	0.992 (0.049)
Daily activity (Retired)	-0.001 (0.028)	0.999 (0.028)
Daily activity (Other)	0.138* (0.055)	1.148* (0.063)
Constant	0.679*** (0.076)	0.612*** (0.097)
Ln (alpha)	-0.465*** (0.021)	-0.465*** (0.021)
Variance (neighbourhood)	0.274*** (0.015)	0.261*** (0.014)
Number of respondents	24,538	24,538
Number of neighbourhoods	3,113	3,113

Sources: 1VOP (2015); Statistics Netherlands (2014).

Notes: Regression coefficients with standard errors in parentheses. + p<0.10; * p<0.05; ** p<0.01; *** p<0.001 (two-tailed test). Ethnic segregation, economic deprivation, crime rate, contact, threat, age and education are grand mean centred. The variance of the null model is 0.939 (0.033).

Figure 4.1. Predicted values of perceived outgroup size for different values of the actual percentage of non-western and western minorities



Notes: Predicted values (and the uncertainties therein; 90% CI) are based on estimates of both fixed and random effects.

4.4.1. Impact of Neighbourhood Characteristics

In Model 2 (Table 4.2) we include all characteristics of people's own neighbourhoods. Our results show that ethnic segregation within residential neighbourhoods is unrelated to the perceived ethnic outgroup size. Similarly, the likelihood of overestimating the size of the ethnic minority population is not related to ethnic segregation within residential neighbourhoods (Model 2, Table 4.3). Uncontrolled for economic deprivation and crime rate, the same results are found.

The left panel of Figure 4.2 illustrates the role of neighbourhood deprivation. It not only shows that in more economically disadvantaged neighbourhoods, native Dutch make higher estimation of the ethnic outgroup size than in less economically disadvantaged neighbourhoods ($b=0.006$, $se=0.002$; Model 2, Table 4.2), it also demonstrates that increases in the actual number of non-western minorities lead to a somewhat stronger increase in the perceived ethnic outgroup size in more economically deprived neighbourhoods than in less deprived neighbourhoods. This pattern is less clear for western minorities (right panel of Figure 4.2). These findings are in line with our idea that prevailing ethnic stereotypes especially link non-western minorities to poverty. Model 2 in Table 4.3 shows that economic deprivation is also positively related to the likelihood of overestimating the total ethnic outgroup size. In neighbourhoods with a degree of economic deprivation one standard deviation above the mean level, the odds of overestimating is 127% larger as compared to neighbourhoods with a degree of economic deprivation one standard deviation below the mean level ($\exp(12.72 \cdot 0.019) \cdot 100\%$).

Further in line with the idea that ethnic stereotypes affect perceptions of reality is the result that crime rates are positively associated with the perceived ethnic outgroup size. People perceive, on average, more ethnic minorities in neighbourhoods with a higher crime rate than in neighbourhoods with a lower crime rate ($b=0.011$, $se=0.003$; Model 2, Table 4.2). The incidence rate ratio indicates that the (expected) perceived size of the ethnic outgroup is multiplied by a factor of 1.011 when the crime rate increases by one unit. Moreover, the left panel of Figure 4.3 shows that increases in the actual number of non-western minorities lead to a somewhat stronger increase in the perceived ethnic outgroup size in more crime prone neighbourhoods than in less crime prone neighbourhoods. This pattern is also visible, albeit less clear, for western minorities (right panel of Figure 4.3). Native Dutch are also more likely to overestimate the size of the ethnic minority population when the crime rate is higher ($b=0.014$ $se=0.007$; Model 2, Table 4.3). In neighbourhoods with a crime rate one standard deviation above the mean level, the odds of overestimating the total ethnic outgroup size is 118% larger as compared to neighbourhoods with a crime rate one standard deviation below the mean level ($\exp(11.56 \cdot 0.014) \cdot 100\%$).

Table 4.3. Multi-level logistic regression models explaining overestimation of the ethnic outgroup size

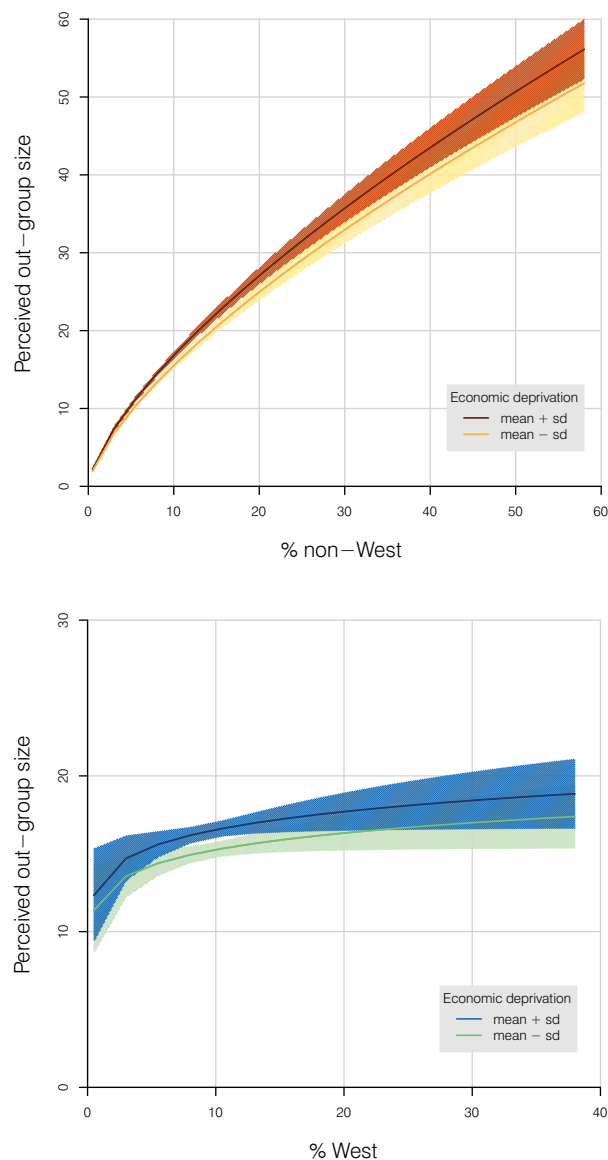
	Model 1			Model 2			Model 3			Model 4		
	B (se)	OR (se)		B (se)	OR (se)		B (se)	OR (se)		B (se)	OR (se)	
Ln (% non-west)	0.693*** (0.042)	2.000*** (0.084)		0.591*** (0.049)	1.806*** (0.089)		0.430*** (0.065)	1.537*** (0.099)		0.253*** (0.072)	1.288*** (0.093)	
Ln (% west)	-1.189*** (0.088)	0.305*** (0.027)		-1.123*** (0.097)	0.325*** (0.032)		-1.161*** (0.128)	0.313*** (0.040)		-1.330*** (0.140)	0.265*** (0.037)	
Ethnic segregation				-0.000 (0.004)	1.000 (0.004)		0.003 (0.004)	1.003 (0.004)		0.009* (0.004)	1.009* (0.004)	
Economic deprivation				0.019** (0.006)	1.019** (0.006)		0.029*** (0.008)	1.029*** (0.008)		0.020* (0.009)	1.020* (0.009)	
Crime rate				0.014+ (0.007)	1.014+ (0.007)		0.010 (0.007)	1.011 (0.007)		0.007 (0.008)	1.007 (0.008)	
Ln (% non-west adjacent nbs)							0.309*** (0.079)	1.362*** (0.107)		0.318*** (0.086)	1.375*** (0.119)	
Ln (% west adjacent nbs)							0.027 (0.162)	1.027 (0.166)		0.106 (0.177)	1.111 (0.196)	
Ethnic segregation (adjacent nbs)							-0.002 (0.004)	0.998 (0.004)		-0.004 (0.005)	0.996 (0.004)	
Economic deprivation (adjacent nbs)							-0.009 (0.009)	0.991 (0.009)		-0.004 (0.010)	0.996 (0.010)	
Crime rate (adjacent nbs)							-0.005 (0.003)	0.995 (0.003)		-0.004 (0.004)	0.996 (0.004)	
Contact non-western										0.189*** (0.016)	1.208*** (0.020)	
Contact western										0.066*** (0.019)	1.069*** (0.020)	
Ethnic Threat										0.516*** (0.026)	1.676*** (0.043)	

Gender (REF: Female)	-0.390*** (0.065)	0.677*** (0.044)
Age (in years)	-0.032*** (0.004)	0.969*** (0.003)
Education (in years)	-0.080*** (0.012)	0.923*** (0.011)
Kids (REF: no kids)	-0.011 (0.083)	0.989 (0.082)
Daily activity (REF = Working)	0.004 (0.156)	1.004 (0.157)
Daily activity (Looking for work)	0.325** (0.120)	1.383** (0.166)
Daily activity (unable to work)	-0.305 (0.262)	0.737 (0.193)
Daily activity (Student)	-0.019 (0.150)	0.981 (0.147)
Daily activity (House wife/husband)	0.091 (0.091)	1.095 (0.099)
Daily activity (Retired)	0.359* (0.160)	1.432* (0.229)
Constant	-0.023 (0.151)	-0.282 (0.277)
Variance (neighbourhood)	1.574*** (0.082)	1.537*** (0.081)
Number of respondents	24,538	24,538
Number of neighbourhoods	3,113	3,113

Sources: 1VOP (2015); *Statistics Netherlands* (2014).

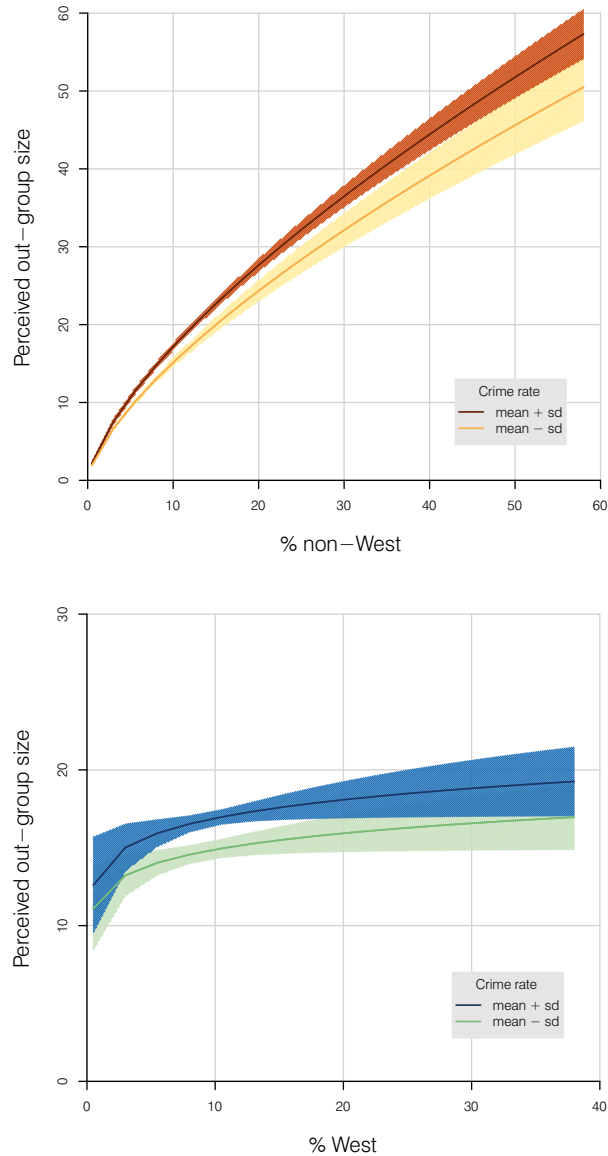
Notes: Regression coefficients with standard errors in parentheses. + p<0.10; * p<0.05; ** p<0.01; *** p<0.001 (two-tailed test). Ethnic segregation, economic deprivation, crime rate, contact, threat, age and education are grand mean centred. The variance of the null model 1.832 (0.092).

Figure 4.2. Predicted values of perceived outgroup size for different values of economic deprivation



Notes: Predicted values (and the uncertainties therein; 90% CI) are based on estimates of both fixed and random effects. The other continuous variables included in the model are held constant at their mean value.

Figure 4.3. Predicted values of perceived outgroup size for different values of the crime rate



Notes: Predicted values (and the uncertainties therein; 90% CI) are based on estimates of both fixed and random effects. The other continuous variables included in the model are held constant at their mean value.

4.4.2. Impact of Characteristics of Adjacent Neighbourhoods

A high percentage of non-western minorities in adjacent neighbourhoods has a positive impact on individuals' estimations of the ethnic outgroup size in their own neighbourhood ($b=0.103$, $se=0.031$; Model 3, Table 4.2). The incidence rate ratio indicates that the (expected) perceived size of the ethnic outgroup is multiplied by a factor of 1.109 when the (natural logarithm of) the percentage of non-western minorities increases by one unit. The presence of non-western minorities in the residential neighbourhood are more likely to trigger high perceptions of neighbourhood outgroup size when also surrounding areas have a relatively high number of residents with a non-western background (Figure 4.4). The presence of non-western minorities in adjacent neighbourhoods is also associated with a higher likelihood of over-estimating the ethnic outgroup size ($b=0.309$, $se=0.079$; Model 3, Table 4.3).

Similarly, the presence of western minorities in adjacent neighbourhoods has a significant influence on the perceived ethnic outgroup size ($b=0.149$, $se=0.079$; Model 3, Table 4.2). The association between the number of western minorities in people's own neighbourhood and the perceived number of ethnic minorities even turns non-significant after inclusion of the percentage of western minorities in adjacent neighbourhoods. The presence of western minorities in adjacent neighbourhoods does not impact the likelihood that people overestimate the size of the ethnic outgroup ($b=0.027$, $se=0.162$; Model 3, Table 4.3).

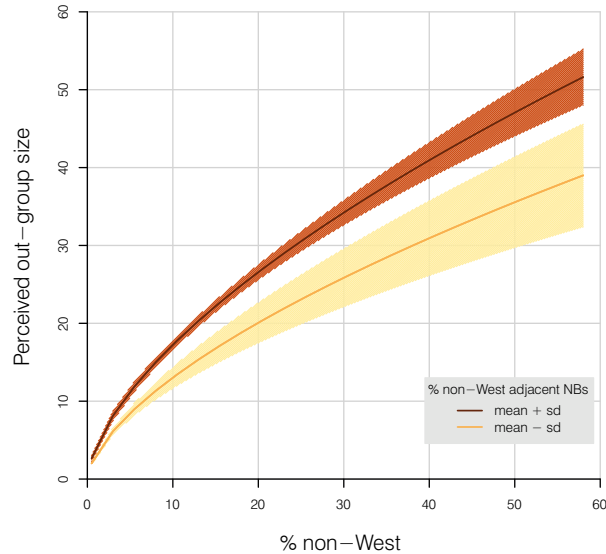
Besides the presence of non-western and western minorities in adjacent neighbourhoods, we expected that the degree of ethnic segregation, the degree of economic deprivation and the prevalence of crime in adjacent neighbourhoods would also have an additional impact on the perceived ethnic outgroup size in people's own neighbourhood. Only economic deprivation is (weakly) related to the perceived ethnic outgroup size ($b=-0.006$, $se=0.003$). People perceive less ethnic minorities when the adjacent neighbourhoods are more deprived. This is contrary to our expectation that economic deprivation in adjacent neighbourhoods would have a positive impact on the perceived outgroup size. Neither segregation, nor deprivation and crime in adjacent neighbourhoods are associated with the likelihood of over-estimating the ethnic outgroup size (Model 3, Table 4.3).

All in all we find limited corroborative evidence for the idea that surrounding areas affect people's perceptions of the ethnic outgroup size in their own neighbourhood. The presence of non-western minorities in adjacent neighbourhoods plays the most substantial role.

4.4.3. Impact of Contact and Threat

In line with previous research (e.g. Wong et al., 2012; Forrest, 2008; Sigelman and Niemi, 2001; Henning and Lieberg, 1996), we find that lower-educated, younger people and people who are unable to work perceive more ethnic minorities in their neighbourhoods

Figure 4.4. Predicted values of perceived outgroup size for different values of percentage non-western minorities in adjacent neighbourhoods



Notes: Predicted values (and the uncertainties therein; 90% CI) are based on estimates of both fixed and random effects. The other continuous variables included in the model are held constant at their mean value.

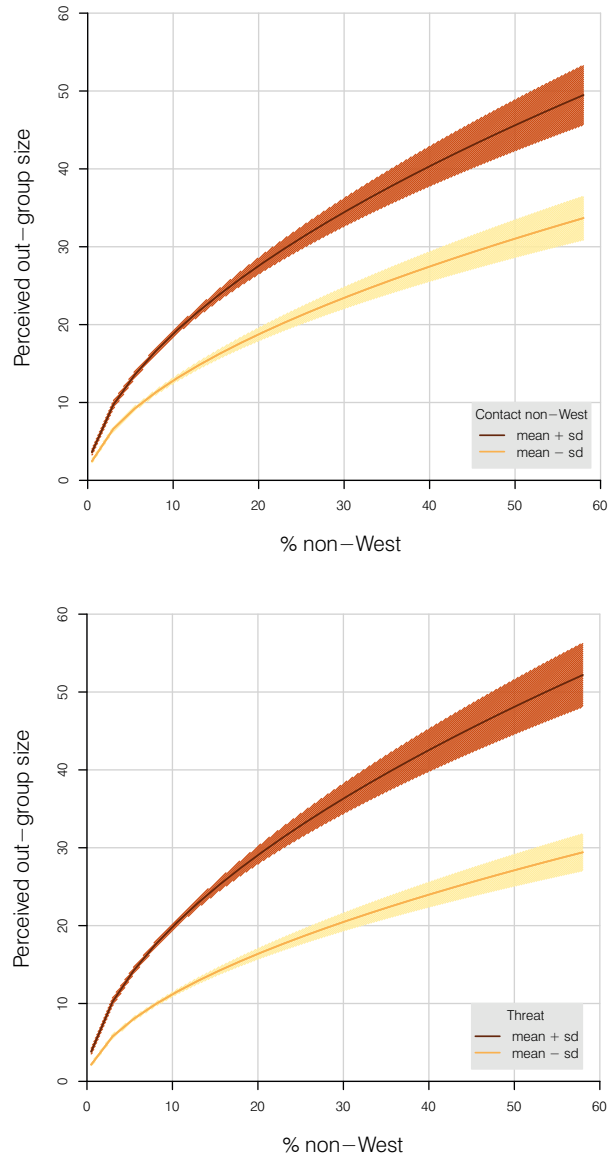
and are more likely to overestimate the ethnic outgroup size than higher-educated, older and employed people respectively (Model 4, Table 4.2 and 4.3).

Even after controlling for these factors, we find that people who have more contact with non-western minorities perceive more ethnic minorities in the neighbourhood ($b=0.91$, $se=0.005$; Model 4, Table 4.2). The left panel of Figure 4.5 shows that increases in the actual number of non-western minorities lead to a substantially stronger increase in the perceived ethnic outgroup size for native Dutch who frequently interact with non-western minorities than for native Dutch who do not or only rarely interact with non-western minorities in their neighbourhood. Model 4 in Table 4.3 shows that contact with non-western minorities is also positively related to the likelihood of overestimating the total ethnic outgroup size ($b=0.189$, $se=0.016$). For people who interact with non-western minorities (almost) every day, the odds of overestimating is 311% larger as compared to people who never interact with non-western minorities in their neighbourhood ($\exp(6 \cdot 0.189 \cdot 100\%)$).

People who have more contact with western minorities also perceive more ethnic minorities in the neighbourhood ($b=0.022$, $se=0.006$; Model 4, Table 4.1). The incidence rate ratio indicates that the (expected) perceived size of the ethnic outgroup is multiplied by a factor of 1.023 when contact increases by one unit. Model 4 in Table 4.3 shows that contact with western minorities is also positively related to the likelihood of overestimating the total ethnic outgroup size ($b=0.066$, $se=0.019$). For people who interact with western minorities (almost) every day, the odds of overestimating is 149% larger as compared to people who never interact with western minorities in their neighbourhood ($\exp(6*0.066*100\%)$).

Residents who experience ethnic threat perceive more ethnic minorities in their neighbourhood ($b=0.212$, $se=0.007$; Model 4, Table 4.2). The incidence rate ratio indicates that the (expected) perceived size of the ethnic outgroup is multiplied by a factor of 1.236 when threat increases by one unit. The right panel of Figure 4.5, moreover, shows that increases in the actual number of non-western minorities lead to a substantially stronger increase in the perceived ethnic outgroup size for native Dutch who experience more ethnic threat than for native Dutch who experience less ethnic threat. Feelings of ethnic threat also increase the likelihood of overestimating the size of the ethnic minority population ($b=0.516$, $se=0.026$; Model 4, Table 4.3). For people who experience a lot of threat, the odds of overestimating is 788% larger as compared to people who do not experience threat at all ($\exp(4*0.516*100\%)$). Threat is clearly an important factor in explaining perceptions of the ethnic outgroup size and overestimations thereof.

Figure 4.5. Predicted values of perceived outgroup size for different values of contact with non-western minorities and of threat



Notes: Predicted values (and the uncertainties therein; 90% CI) are based on estimates of both fixed and random effects. The other continuous variables included in the model are held constant at their mean value and the other categorical variables included in the model are held constant at the reference category.

4.5. Conclusions

In this study our purpose was to investigate how perceptions and overestimations of the ethnic outgroup size in the neighbourhood come about. It is a first step in understanding how individuals' perceptions of the residential environment might explain *why* ethnic diversity affects social cohesion. Native Dutch are more perceptive of increases in non-western minorities than of increases in western minorities and are more likely to overestimate the size of the non-western minority population than the size of the western minority population. How ethnic group sizes are perceived relates to much more than the objective percentages alone. When native Dutch live in a different neighbourhood but with a similar number of ethnic minorities, they may perceive the ethnic composition differently. Even residents of the same neighbourhood vary widely in how they perceive the ethnic outgroup. The size of the ethnic outgroup is indeed in the eye of the beholder.

The concurrence of ethnic minorities and neighbourhood economic deprivation and neighbourhood crime leads to higher estimations of the ethnic outgroup size. The likely prevalence of ethnic stereotypes linking ethnic minorities to both poverty and crime in the Netherlands may explain why this is the case. Future research could test this theoretical mechanism directly by including measures of ethnic stereotypes into the explanatory model. It would furthermore be interesting to investigate how – besides individuals' perceptions of the ethnic outgroup – perceptions of economic deprivation and the prevalence of crime in the neighbourhood are related to the objective neighbourhood environment, and how these perceptions are, in turn, related to one another.

To our knowledge, we are the first in the field to demonstrate that the actual number of non-western minorities in surrounding neighbourhoods also augments individuals' perceptions of the ethnic outgroup size in their own residential neighbourhood. The additional impact of non-western minorities in surrounding neighbourhoods is smaller than the impact of these minorities in people's own neighbourhoods. Segregation, deprivation and crime in adjacent neighbourhoods do not play a substantial role in explaining neither people's perceptions of the ethnic outgroup size nor their likelihood of overestimating the ethnic outgroup size. All in all, these results suggest that the influence of environmental features on people's neighbourhood perceptions should be studied at a small-scale, local level. This is most interesting in light of the ongoing discussion about what constitutes the right level at which to examine neighbourhood effects (e.g. Dinesen and Sønderskov, 2015; Tolsma and Van der Meer 2017).

With respect to interethnic contact experiences, we find that contact with non-western minorities in particular increases the perception and overestimation of ethnic minorities. Ethnic threat is strongly related to the perception of ethnic minorities

in the neighbourhood. Apparently ethnic threat makes people more aware of the presence of ethnic minorities in the neighbourhood, and consequently makes them more likely to overestimate the actual ethnic outgroup size. However, we should be cautious with making strong causal interpretations as this study relied on cross-sectional data. We were unable to disentangle the temporal order between threat and the perceived ethnic outgroup size.

Generally, our results suggest that native Dutch are inclined to think about the more visible non-western minorities when asked about ethnic minorities in general and/or that non-western minorities are more easily recognized than western minorities. Under certain circumstances native Dutch are somewhat more perceptive of the less visible group of western minorities in the neighbourhood. In economically deprived and high crime neighbourhoods people are more aware of the presence of these western minorities. Future research could focus on uncovering more precisely how the objective size of specific minority groups determines people's assessment of the total ethnic outgroup size and of the size of this specific group.

During our survey, we provided respondents with a so-called ego-centred definition of neighbourhood (i.e. a radius of 15 minutes' walking distance) to ensure that all respondents thought of similar neighbourhoods when making an assessment of the ethnic outgroup size in the neighbourhood. Unfortunately, we had to aggregate contextual variables to postcode neighbourhoods. The ego-centred definition is not only on average somewhat larger than the latter, but respondents do not all live in the centre of their postcode area. Future studies should prevent this mismatch by considering what constitutes a person's neighbourhood. That said, if this mismatch had been a serious problem, we would have expected the surrounding environment to play a larger role in shaping individuals' perceptions of the ethnic outgroup size.

At the outset of this article we argued that the importance of explaining which factors shape individuals' estimations of the ethnic outgroup size should also be understood in the context of a broader public and academic debate about the consequences of migration processes for the wellbeing of western societies. Knowing that perceptions of the ethnic outgroup size and overestimations thereof are shaped by more than actual percentages of ethnic minorities in a neighbourhood – most notably by ethnic stereotypes and ethnic threat – it makes sense that the impact of people's perceptions of the ethnic outgroup size on indicators of cohesion is found to be more consistent than the impact of the objective ethnic composition (e.g. Hipp and Wickes, 2016; Hooghe and De Vroome 2015; Schaeffer 2014b). This ultimately raises the question as to whether disparities between perceptions and realities of ethnic minority groups can be battled by social policies, and whether neighbourhood cohesion would increase were perceptions to line up with reality.

Chapter notes

1. We define being native Dutch as those respondents whose parents were Dutch, or respondents who identified with the Netherlands in case one parent was non-Dutch.
2. In the Netherlands, complete postcodes are combinations of four digits and two letters (e.g. 1011AB), resembling small parts of a specific street.
3. We also analysed the likelihood of overestimation by assigning a '1' to respondents who overestimated the actual size of the ethnic outgroup by more than 2% and by more than 5%. There was only one noticeable difference: for the model using a cut-off point of overestimating with more than 5%, the coefficient for crime was not significant.
4. The descriptive statistics of our control variables will not be publicly disclosed at the request of the owners of the 1VOP panel.
5. Preliminary analyses demonstrated that the negative binomial model fits our data better than a Poisson model or a linear model assuming a standard normal distribution of errors.
6. As $\log(0)$ is undefined, we added 0.5 to all percentage of non-western and western minorities.



5

PERCEPTIONS AS THE CRUCIAL LINK? THE MEDIATING ROLE OF NEIGHBOURHOOD PERCEPTIONS IN THE RELATIONSHIP BETWEEN THE NEIGHBOURHOOD CONTEXT AND NEIGHBOURHOOD COHESION*

* A slightly different version is currently under review at an international journal
Co-authors are Jochem Tolsma and John R. Hipp

5.1. Introduction

Ongoing immigration to western countries triggered a heated political and academic debate about the possible threats of ethnic diversity for the well-being of society. In a widely cited article, Putnam (2007) claimed that ethnic diversity in U.S. communities erodes social cohesion both between and within ethnic groups. This paper spurred other research investigating the diversity-cohesion relationship in the United States as well as in Europe (e.g. Savelkoul, Gesthuizen and Scheepers, 2014; Fieldhouse and Cutts, 2010; Stolle, 2008; Letki, 2008). Meta-analyses of the multitude of studies investigating the diversity-cohesion relation pointed out that if a negative effect of ethnic diversity is found at all, it is more common in the United States than in Europe and it is more consistent for aspects of social cohesion that are spatially bound to the neighbourhood, such as trust in neighbours and favourable neighbourhood evaluations, than for other social cohesion indicators (Schaeffer, 2014a; Van der Meer and Tolsma, 2014). A recent direct replication of Putnam's study on his original dataset shed further doubt on the claimed generic negative consequences of diversity. Even in the United States, once ethno-racial differences between individuals are accounted for, ethnic diversity appears to be unrelated to social cohesion. The size of the ethnic in-group, on the other hand, is – at least for whites – positively associated with some indicators of cohesion, such as trust in neighbours (Abascal and Baldassarri, 2015).

Ethnic group sizes are not the only neighbourhood characteristics that are being linked to social cohesion. Previous research demonstrated that residents of socio-economically disadvantaged and crime prone neighbourhoods are less likely to display high levels of cohesion than residents of affluent and safe neighbourhoods (e.g. Letki, 2008; Laurence and Heath, 2008; Oliver and Mendelberg, 2000). Some authors even show that economic deprivation is much more consistently related to lower levels of social cohesion than the ethnic make-up of the neighbourhood (e.g. Fieldhouse and Cutts, 2010). As economic deprivation and crime tend to be highly correlated with ethnic minority density in U.S. neighbourhoods (Sampson, Raudenbush and Earls, 1997; Sampson and Wilson, 1995; Sampson and Groves 1989), it is important to assess their influence on social cohesion simultaneously. The first aim of this manuscript is therefore to investigate how the neighbourhood ethnic, economic and crime composition affect neighbourhood cohesion within U.S. neighbourhoods. We use a recent individual-level data set, the American Social Fabric Study (Butts et al., 2014), enriched with contextual-level data from the U.S. Census Bureau (2010).

The second aim is to explain the observed neighbourhood effects. In this study, we focus on individuals' perceptions of the neighbourhood as an explanatory mechanism. This is not to say that the residential environment can only be consequential if individuals are aware of it. People may, for example, have less neighbourly contact and subsequently less social cohesion in ethnically diverse neighbourhoods (Vroome,

Hooghe and Marien, 2013; Gundelach and Freitag 2014), even though they are not consciously aware of the fact that they live in an ethnically diverse environment. However, people's perceptions of different aspects of the neighbourhood environment may serve as one of several links between the objective neighbourhood environment and people's attitudes toward the neighbourhood community (Ajzen, 2012; Fishbein and Ajzen, 2011; Fishbein, 1963). We will therefore explore to what extent the impact of the objective neighbourhood characteristics (ethnic in-group size, economic deprivation and crime) on neighbourhood cohesion can be explained by how residents perceive their neighbourhood.

Whereas there is little consensus about the impact of the actual neighbourhood composition on social cohesion – especially with respect to the ethnic composition –, perceived ethnic minority density (and conversely a small ethnic in-group for whites (e.g. Hipp and Wickes, 2016; Hooghe and Vroome, 2015; Schaeffer, 2014b) and perceived social disorder (Skogan, 1990; Mirowsky and Ross, 1989) – which is closely related to perceived economic deprivation – and perceived unsafety from crime (Ross and Sung, 2000) are more consistently shown to be negatively related to social cohesion for whites. We assess whether these perceptions of the neighbourhood can, besides having a direct relation with cohesion, also explain the effects of the objective neighbourhood characteristics on cohesion. Newman, Velez, Hartman and Bankert (2015) showed that the perceived number of immigrants in the neighbourhood mediates the impact of the objective number of immigrants on the extent to which people considered immigration a big problem in their community. We build on this work by examining the broader concept of neighbourhood cohesion and by additionally studying perceptions of the economic and crime composition of the neighbourhood and the degree to which these perceptions mediate the impact of the ethnic, economic and crime composition on neighbourhood cohesion.

This study is thus not only a replication of other studies investigating the role of the ethnic composition of the neighbourhood in shaping social cohesion. Although such a replication using recent U.S. data is valuable in itself, we bring the field forward, firstly, by investigating the relative importance of the ethnic in-group size, economic deprivation and the prevalence of community crime for neighbourhood cohesion and, secondly, by examining how subjective evaluations of the neighbourhood explain the role of the neighbourhood context in shaping cohesion. This chapter thus aids in understanding *why* ethnic diversity is related to social cohesion. So far, neighbourhood perceptions are neglected as a possible explanation for the relationship between the objective neighbourhood context and cohesion. To get a better understanding of how individuals' perceptions of the neighbourhood mediate contextual neighbourhood effects, we employ state-of-the-art multi-level structural equation models (MSE-models, Preacher, Zyphur and Zhang, 2011; 2010).

5.2. Theoretical framework

5.2.1. Direct effects of the neighbourhood context

Researchers have long focused on explaining how the social and structural composition of neighbourhoods affect pro-social attitudes (e.g. trust) and behaviour (e.g. volunteering) of individuals (cf. Sharkey and Faber, 2014). The focus has mainly been on the extent to which the ethnic and the economic composition of the neighbourhood influence neighbourhood cohesion. In the related literature studying social disorder, the prevalence of crime in the residential environment also takes a prominent position as an explanatory factor. In line with these research traditions, the aim of this study is to identify the role of the ethnic in-group size, economic deprivation and the prevalence of crime in the community in shaping neighbourhood cohesion in U.S. neighbourhoods.

The constrict proposition stating that "...people living in ethnically diverse settings appear to 'hunker down' – that is, to pull in like a turtle" (Putnam, 2007:149) has recently been called into question. Review studies showed that the ethnic composition of one's living environment plays a much more common role in eroding cohesion in the United States than in Europe and that such an eroding influence is much more consistent for dimensions of social cohesion that are directly related to the neighbourhood environment (Schaeffer, 2014a; Van der Meer and Tolsma, 2014). A replication of Putnam's study, using the same data, further demonstrated that the ethnic in-group size – and not ethnic diversity per se – is associated with trust in neighbours, but only for whites (Abascal and Baldassarri, 2015). Whites living among other whites experience more trust than whites living among non-whites. Thus, the constrict proposition is much less generic than claimed by Putnam (2007), as it only seems to hold under specific circumstances. If an association between the ethnic composition of the living environment and social cohesion is to be expected at all, it is most likely to be found between the ethnic in-group size within the neighbourhood and neighbourhood cohesion among whites in the United States. Using a recent dataset (Butts et al., 2014), we are able to examine whether – under these specific circumstances – one could speak of a consistent relationship.

To correctly assess the positive association between the ethnic in-group size and neighbourhood cohesion, it is imperative to guard against spuriousness by accounting for other factors that could plausibly explain the observed relationship (Portes and Vickstrom, 2011). As economic deprivation and crime tend to be highly correlated with ethnic minority density in U.S. neighbourhoods (Sampson and Groves 1989; Sampson and Wilson, 1995; Sampson et al. 1997), these are neighbourhood characteristics that need to be controlled for.

The negative association between economic deprivation and social cohesion seems to be quite universal. Residents of more disadvantaged neighbourhoods are

less likely to display high levels of social cohesion than residents of more affluent neighbourhoods (e.g. Letki, 2008; Laurence and Heath, 2008). For the United States, Fieldhouse and Cutts (2010) demonstrated that the eroding effect of neighbourhood poverty is more than four times larger than the eroding effect of the neighbourhood ethnic composition. Abascal and Baldassari (2015) further showed that, whereas poor economic condition are negatively related to a wide range of indicators of trust, from trust in neighbours to interethnic trust, and even generalized trust, for whites, blacks and Hispanics, a large ethnic in-group is only negatively associated with ethnically or locally bounded indicators of trust for whites.

According to Oliver and Mendelberg (2000, p. 576), exposure to crime "...leads to a constellation of negative psychological states which are experienced by residents: feelings of anxiety and fear, alienation from neighbours, lack of trust in others, and suspicion toward out-groups in general". In neighbourhood studies conducted outside of the United States the empirical evidence for this hypothesis is rather mixed: some studies find a negative effect of crime (e.g. Sturgis, Brunton-Smith, Read and Allum, 2010; Laurence and Heath, 2008) whereas others do not (e.g. Dinesen and Sønderskov, 2015; Scheepers, Schmeets and Pelzer, 2013). In the United States, on the other hand, living in high crime communities does seem to quite consistently erode social cohesion (Fieldhouse and Cutts, 2010; Putnam, 2007).

5.2.2. Mediating effects of the perceived neighbourhood context

If theoretical mechanisms for the possible effects of living in a neighbourhood with a large non-white (i.e. non-coethnic) population were paid attention to in previous research, scholars focused on the contact mechanism, derived from macro-structural theories of intergroup relations (Blau, 1977) and contact theory (Allport, 1954), and on the threat mechanism, derived from conflict theory (Quillian, 1995; Blalock, 1967).

The contact theory states that an increase in contact opportunity in neighbourhoods with a large ethnic out-group leads to an increase in interethnic contact (Martinovic, 2013; Wagner et al., 2006; Blau, 1977). This tends to foster interethnic tolerance (Pettigrew and Tropp, 2011; Brown and Hewstone, 2005; Pettigrew, 1998; Allport, 1954), which in turn stimulates interethnic social cohesion. As the contact mechanism proposes a positive impact of a large ethnic out-group for (at least interethnic) social cohesion, it is not suitable to further our understanding of the negative association between a large ethnic out-group and neighbourhood cohesion for whites in the United States. Moreover, the contact mechanism is essentially an interethnic explanation, whereas we aim to explain neighbourhood cohesion over and above ethnic division lines. This also holds for the threat mechanism stating that competition with members of the ethnic out-group over economic and cultural resources (cf. Bobo, 1999; Blalock, 1967) in neighbourhoods with a large ethnic out-group are said to increase threat, which in turn could be harmful for interethnic

social cohesion. Moreover, the empirical link between the neighbourhood context and feelings of threat are found to be inconclusive (e.g. Savelkoul, Hewstone, Scheepers and Stolle, 2015), also dismissing threat as a mediating factor between the neighbourhood context and neighbourhood cohesion.

We aim to further knowledge about the relationship between the ethnic composition of the neighbourhood and social cohesion by looking at another mechanism: individuals' perceptions of the neighbourhood context. The actual neighbourhood composition constitutes part of the basis upon which individuals shape their perceptions about the neighbourhood (Strabac, 2011; Aneshensel and Sucoff, 1996). Individuals' perceptions of the ethnic composition of the neighbourhood could therefore function as pathways linking the actual ethnic composition of the neighbourhood to neighbourhood cohesion (Wen, Hawkey and Cacioppo, 2006). The perceived ethnic composition of the neighbourhood might even more accurately capture the way in which individuals are exposed to, experience and interact with their neighbourhood (Weden, Carpiano and Robert, 2008). We therefore expect that the impact of the actual number of whites on neighbourhood cohesion may, at least partly, run through the perceived number of whites.

As individuals' perceptions of the neighbourhood are not restricted to the ethnic composition of the neighbourhood, we also examine to what extent the actual degree of economic deprivation is explained by the perceived degree of economic deprivation and to what extent the impact of the actual crime rate is explained by the perceived unsafety from crime. Moreover, we will go one step further and additionally investigate whether also cross-pathways between the objective and perceived neighbourhood composition exist. For instance, the actual size of the ethnic in-group in the neighbourhood may not only be related to the perceived ethnic in-group size but also to perceptions of economic deprivation and unsafety.

Historically and structurally induced inequality in affluence between whites and non-whites has given rise to ethnic stereotypes linking poverty to ethnic out-groups (Quillian and Pager, 2001). These ethnic stereotypes may contribute to the perception that there are greater numbers of non-whites (and consequently smaller numbers of whites) in economically deprived neighbourhoods. Conversely these stereotypes could also induce the perception of a neighbourhood being deprived as a consequence of the presence of a sizeable number of non-whites (Quillian, 1995). Existing research in the United States has also shown that a strong perceptual association between race and crime exists, beyond any actual association between the two (Quillian and Pager, 2010). The objective number of non-whites is positively associated with individuals' overestimation of crime rates (e.g. Pickett, Chiricos, Golden and Gertz, 2012; Skogan, 1995). Because of these ethnic stereotypes linking ethnic minorities to crime, perceptions of the ethnic out-group size (i.e. a smaller number of whites) may be higher in high crime communities and perceptions of

unsafety from crime may be higher in neighbourhoods with a sizeable non-white population. Previous studies have similarly shown that people link economic deprivation to crime and feelings of unsafety and vice versa (e.g. Ross and Mirowsky, 2001).

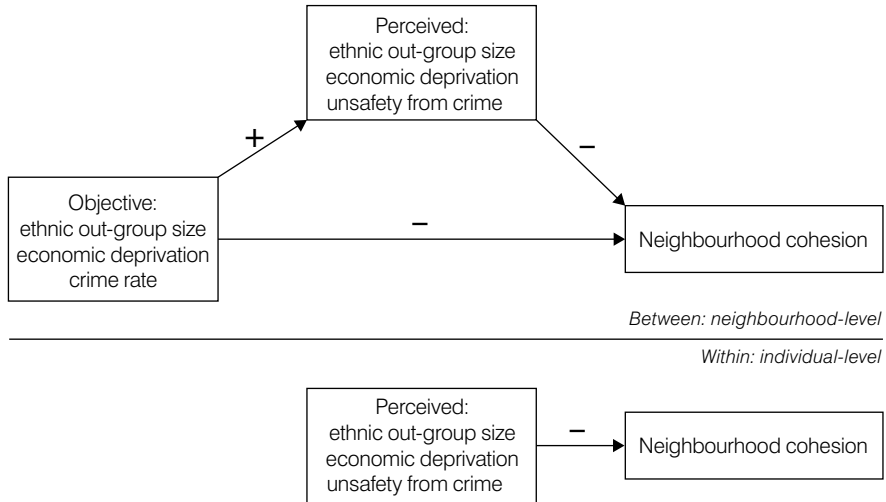
Individuals' perceptions of their neighbourhoods consists of much more than just the actual neighbourhood composition. Previous studies have shown that, even though individuals' perceptions of ethnic out-group size are not totally disjoined from reality (Strabac, 2011), they vary substantially between individuals (e.g. Herda, 2010; Alba, Rumbaut and Marotz, 2005). Similarly, perceptions of crime rates vary substantially, notwithstanding that on average individuals' estimates are clearly associated with the actual crime rates (Hipp, 2013).

People living in the same neighbourhood may perceive their residential environment differently (Harding et al., 2011), because perceptions are also shaped by social position (Sampson, 2012). Variation in perceptions are found between men and woman, younger and older people, lower and higher educated individuals (Wilcox, Quisenberry and Jones, 2003; Sigelman and Niemi, 2001; Ferraro, 1995). Any mediation by the perceived neighbourhood context of the association between the objective neighbourhood context and neighbourhood cohesion can, however, only occur at the neighbourhood level (Hofmann, 2002). This is because the actual ethnic, economic and crime composition only vary between neighbourhoods and not between individuals within in the same neighbourhood. In this study we therefore separate neighbourhood perceptions in a between-level (i.e. neighbourhood level) and a within-level (i.e. individual level) when testing for mediation.

A simplified overview of our theoretical framework is shown in Figure 5.1.

5.3. Data and Measures

This study uses individual-level data from the American Social Fabric Study (ASFS, Butts et al., 2014). The ASFS study population consists of adult, non-institutionalized residents of the western United States. We use three samples of the ASFS that each comprise a distinct but overlapping geographic area in the western United States: a spatially stratified sample of the southern California region, a population sample of the city of Los Angeles, and a spatially stratified sample of the western part of the continental United States. Recruitment of respondents was conducted by postal mail and the data was collected via a web-based survey between April 2012 and January 2013. The overall response rate was 19.3%, which is similar to other postal recruitment and online surveys conducted at the time of this study (Messer and Dillman, 2011). Comparison of sample demographics with Census data furthermore demonstrated good overall agreement (Smith et al., 2015). To further correct for a possible response bias, we control for several socio-demographic characteristics (see below). In total,

Figure 5.1. Simplified theoretical framework

Note: To display the theoretical expectations as parsimonious as possible, we refer to ethnic out-group size in this table, instead of to ethnic in-group size.

3370 respondents completed the survey in the three samples used (southern California $N=1106$, Los Angeles $N=221$, western US $N=2043$). To correct for a possible sample bias, we also control for the sample in which respondents participated. These individual-level data from the ASFS were enriched with census tract level data from the US Census Bureau (2010). We focus on whites only, because the number of ethnic minorities in our data is too small to account for differential effects across ethnic groups. We therefore deleted listwise 483 respondents who did not identify as white ($N=384$) or who did not report their ethnicity ($N=99$).

5.3.1. Dependent variable

Social cohesion is in this study defined as “the degree of interconnectedness between individuals that is both a result and cause of public and civic life.” (Van der Meer and Tolsma, 2014:460). A distinction can be made between a behavioural and an attitudinal dimension of social cohesion. The latter refers to a set of attitudes and norms that facilitates people’s predisposition toward cooperation, participation and a willingness to help, whereas the former refers to the actual behavioural manifestations of these attitudes and norms (Chan, To and Chan, 2006). We focus on the cognitive

dimension of social cohesion. More specifically, we examine the degree of cohesion that is inherently bound to a specific geographical radius, namely the neighbourhood.

We measure neighbourhood social cohesion, as a latent variable. By including five indicators of neighbourhood social cohesion, we appreciate the complexity of the phenomenon under study. The estimated MSE-models combine a confirmatory factor model capturing the latent variables with a path analysis modelling the relations between the variables. The following five indicators are used. First, 'How strongly do you agree that people in this neighbourhood can be trusted?'. Second, 'How strongly do you agree that people in this neighbourhood share the same values?'. Third, 'How strongly do you agree that this is a close-knit neighbourhood?'. Fourth, 'How strongly do you agree that people around here are willing to help their neighbours?'. Fifth, 'How strongly do you agree that people in this neighbourhood generally get along with each other?'. The answer categories to these five item are '1. Strongly disagree', '2. Disagree', '3. Neither disagree nor agree', '4. Agree', '5. Strongly Agree'.

5.3.2. Perceptions of the neighbourhood

We measure individuals' perceptions of the ethnic composition of the neighbourhood with the following item: 'In your neighbourhood, what percentage of the residents are the same racial/ethnic group as you?'. The answer categories to this item are: 0-9%, 10-19%, 20-29%, 30-39%, 40-49%, 50-59%, 60-69%, 70-79%, 80-89%, 90-100%. We use the midpoint values of these ten categories, and recoded them to proportions. As we only examine whites, this measure refers to the perceived number of whites in the neighbourhood.

Individuals' perceptions of the degree of economic deprivation are measured as a latent variable based on three (observed) indicators. First, 'To what extent are litter and trash a problem in your neighbourhood?'. Second, 'To what extent are rundown housing/buildings a problem in your neighbourhood?'. Third, 'To what extent is vacant housing a problem in your neighbourhood?'. The answer categories to these items are: '1. Not at all a problem', '2. Only somewhat of a problem', '3. Somewhat serious problem', '4. Very serious problem'.

The perception of the prevalence of crime is also measured as a latent variable based on three items. First, 'How safe do you think your neighbourhood is from crime?'. Second, 'How safe is it to walk alone in your neighbourhood during the daytime?'. Third, 'How safe is it to walk alone in your neighbourhood after dark?'. The answer categories to these items are: '1. Very unsafe', '2. Somewhat safe', '3. Neither unsafe nor safe', '4. Somewhat safe', '5. Very safe'. We recoded these items so that a higher score reflects more unsafety from crime.

5.3.3. Neighbourhood variables

We measure the ethnic composition of the neighbourhood as the proportion of in-group members (i.e. the proportion of whites) living in the neighbourhood. Individuals' perceptions of the ethnic composition also refer to the percentage of residents that are of the same racial/ethnic group (i.e. the proportion of whites). We therefore measure the objective ethnic composition in a similar fashion.

Economic deprivation is measured with the average yearly household income within the neighbourhood in 10,000\$. We multiplied the average yearly household income by -1 so that a higher score on this indicator corresponds to a higher degree of economic deprivation. Both the objective and the perceived measure of the economic neighbourhood composition refer to deprivation – instead of affluence – in the neighbourhood.

As crime data is not available at the tract level and is difficult to collect from specific agencies, we measured the prevalence of crime as the rate of robberies at the city level (per 100,000 people a year). Robberies include both completed and attempted thefts of property or cash directly from a person by using (threat of) force. Robberies are likely to take place on public streets, unobstructed from public view, making them a visible type of crime for community residents. This type of crime is therefore likely to specifically affect people's sense of safety within the community. For this reason, we use the rate of robberies to measure crime rate in the community. For people in more rural areas, or in very small towns, their own city often does not report crime data. In those cases, we have located the 3 closest cities, and created a weighted average based on inverse distance to the person for the crime rates of those cities. We include the square root of the rate of robberies.

5.3.4. Control variables

We control for known determinants of social cohesion and of neighbourhood perceptions, as a means to make sure that the found (neighbourhood) context effects are in reality not just composition effects. We include age in years and a dummy for gender. We measure education using a categorical variable with the following answer categories: 'less than high school', 'high school', 'some college credit', and 'college degree or higher'. We furthermore include labour market position as a categorical variable with the following answer categories: 'employed', 'unemployed', 'retired', and 'other'. We measure income by including respondents' reported last year's income before taxes in 10,000\$. Two dummies are included measuring whether respondents have a spouse or a partner and whether respondents have children. To measure religiosity, we include church attendance as a continuous variable with the following answer categories: '1. Never', '2. A few times a year', '3. Several times a year', '4. Once or twice a month', '5. Almost every week', '6. Once a week', '7. More than once a week'.

Table 5.1. Descriptive Statistics

	Mean/ Prop.	SD	Min	Max	% missing
<i>Contextual-level characteristics</i>					
Proportion of whites	0.712	0.221	0.000	1.000	0
Average household income per year / 10,000	6.691	3.036	2.022	48.169	0
Robberies per 100,000 people a year	53.333	62.907	0	484.292	0
Population size	4001	2269	36	36880	0
<i>Individual-level characteristics</i>					
<i>Neighbourhood cohesion</i>					
Trust in neighbours	3.906	0.937	1	5	5.031
Same values	3.534	0.987	1	5	5.517
Close-knit neighbourhood	3.328	1.091	1	5	5.274
Informal help is given	4.082	0.878	1	5	5.448
Neighbours get along well	3.922	0.781	1	5	5.482
Perceived proportion whites	0.731	0.259	0.045	0.945	6.037
<i>Perceived economic deprivation</i>					
Trash/Litter problem	1.574	0.698	1	4	5.170
Rundown houses problem	1.573	0.748	1	4	5.725
Vacant housing problem	1.423	0.695	1	4	5.725
<i>Perceived safety from crime</i>					
Neighbourhood safe from crime	1.747	0.910	1	5	5.100
Safe to walk daytime	1.230	0.677	1	5	5.309
Safe to walk after dark	1.680	0.981	1	5	5.552
Age	55.530	15.180	18	97	1.214
Gender (Ref: female)	0.562		0	1	0.312
Income (in 10,000\$)	7.112	5.369	1	22.5	3.643
Education (less than high school)	0.046		0	1	
Education (high school)	0.142		0	1	
Education (some college credits)	0.301		0	1	
Education (college degree or higher)	0.507		0	1	
Education (missing values)					0.243
Labor market position (employed)	0.496		0	1	
Labor market position (unemployed)	0.102		0	1	
Labor market position (retired)	0.311		0	1	

Table 5.1. Continued

	Mean/ Prop.	SD	Min	Max	% missing
Labor market position (other)	0.089		0	1	
Labor market position (missing values)					0.833
Spouse (Ref: no spouse)	0.759		0	1	1.076
Child (Ref: no child)	0.784		0	1	1.318
Church attendance	2.902	2.166	1	8	0.902
Sample wave (Ref: Southern California)	0.318		0	1	
Sample wave (Los Angeles region)	0.034		0	1	
Sample wave (western US)	0.657		0	1	
Sample wave (missing values)					0

Sources: ASFS (2012-2013); US Census Bureau (2010). $N_{\text{individual}} = 2,882$; $N_{\text{neighbourhood}} = 1,062$.

Lastly, we include a dummy for the sample in which the respondents have participated. On the contextual level we control for the degree of rurality of the respondents' environment by including the natural logarithm of the population size within a radius of 20 miles.

5.3.5. Working sample and Missing values

We have to account for missing data at the individual level. Besides the descriptive statistics, the percentage of missing values for each individual-level variable are displayed in Table 5.1. The percentage of missing values ranges from 0.243% for the variable measuring education ($N=7$) to 6.037% for the variable measuring the perceived proportion of whites in the neighbourhood ($N=174$). We replaced the missing values through multiple imputation (MI) using Bayesian analyses in Mplus 7.2 (Muthén and Muthén, 1998-2012; Schafer, 1997; Rubin, 1987). We included all individual-level variables in the imputation procedure.¹ As an alternative procedure, we listwise deleted missing values. This alternative procedure led the similar results (available upon request). Our final sample consists of 2882 individuals living in 1162 neighbourhoods (on average 2.5 respondents per neighbourhood; in 458 neighbourhoods more than 1 respondent).

5.4. Methods

Because our respondents are nested in neighbourhoods, we employ multilevel modelling. We wish to test how neighbourhood perceptions mediate the relationship between the objective neighbourhood context and neighbourhood social cohesion. As our explanatory variables – the ethnic, economic and crime composition – only vary between neighbourhoods and not between individuals within the same neighbourhood, variation in these explanatory variables cannot explain differences between individuals within the same neighbourhood (Hofmann, 2002). Mediation of the association between the neighbourhood context and neighbourhood cohesion can only occur at neighbourhood level (or so-called between-level). Traditional multilevel modelling approaches fail to account for this fact, and may therefore produce conflated or biased estimates of the indirect effects (Preacher et al. 2011; 2010). Therefore, we estimated our models within a framework of multilevel structural equation modelling (MSE-model) in Mplus 7.2 (Muthén and Muthén, 1998-2012).

5.5. Results

The focus of this article is on understanding the relationship between the actual ethnic, economic and crime composition and neighbourhood cohesion, and on uncovering to what extent this relationship is mediated by perceptions of the ethnic, economic and crime composition. First, we estimate a model in which the actual neighbourhood characteristics explain neighbourhood cohesion (direct effects; Model 1, Table 5.2), already controlling for possible composition effects.² Second, we estimate models in which we include the three perceived neighbourhood characteristics one-by-one as mediators (indirect effects; Models 2-4, Table 5.2), as a means to assess which objective neighbourhood characteristic is explained away by which individual-level neighbourhood perception. Third, we include the three perceived neighbourhood characteristics simultaneously (indirect effects; Model 5 Table 5.2). This concerns the structural part of the MSE-models. However, before going into the substantial interpretation of the structural part, we consider the fit indices and the measurement part (i.e. confirmatory factor analysis, CFA) of these models (respectively Appendix 6 and Appendix 7).

For all models the RMSEA, a measure of absolute fit, is below the cut-off point of 0.06 for acceptable fit (Hu and Bentler, 1999), namely ranging from 0.024 to 0.038. The Standardized Root Mean Square Residual (SRMR), another measure of absolute fit, is the only fit statistic that is provided for the between part (i.e. the neighbourhood) and the within part (i.e. the individuals) of the model separately. Values of the SRMR below 0.08 are considered acceptable (Hu and Bentler, 1999). We note that for the

between-part the SRMR is somewhat higher, namely ranging from 0.082 and 0.150. To ensure that miss-specified models are not accepted, the Comparative Fit Index (CFI) and the Tucker Lewis Index or Non-normed Fit Index (TLI), both measure of incremental fit, should be around 0.95 (Hu and Bentler, 1999). The CFI for the models range from 0.928 to 0.982 indicating acceptable fit, whereas the TLI is somewhat lower, namely ranging from 0.895 and 0.976 respectively (Appendix 6).

Appendix 7 shows the measurement part of Model 1 and Model 5 for the latent variables: neighbourhood cohesion, perceived economic deprivation and perceived unsafety from crime.³ The indicators of the latent variables – measured variables – are all significant in the confirmatory factor analysis constituting the measurement part of the MSE-models. For the full model, the minimum standardized factor loading for neighbourhood cohesion on the within level is 0.705 and 0.874 on the between level (not shown). For perceived economic deprivation, the minimum standardized factor loading on the within level is 0.481 and 0.789 on the between level. The minimum standardized factor loading for perceived unsafety from crime is on the within level 0.610 and 0.896 on the between level. Both the significance of the indicators and the standardized factor loadings indicate that the observed variables contribute both on the within as well as on the between level to their respective latent construct.⁴

5.5.1. Structural Model: Direct effects of the Neighbourhood Context

The variance component model (in notes below Table 5.2) tells us that the variance in whites' neighbourhood cohesion on the between level (i.e. the neighbourhood level) is 8% for the null-model. The inclusion of the actual ethnic, economic and crime composition of the neighbourhoods decreases the variance on the neighbourhood level by 74% (from 0.043 to 0.011 model without controls not shown). These three characteristics of the neighbourhood thus seem to explain (between-level) variation in neighbourhood cohesion fairly well.

In Model 1 (Table 5.2), we investigate whether the objective ethnic, economic and crime composition of the neighbourhood are related to neighbourhood cohesion (results for control variables can be found in Appendix 8). As expected, the size of the ethnic in-group in the neighbourhood is significantly related to social cohesion ($b=0.413$, $se=0.102$). In contrast to our theoretical expectations, we find that economic deprivation is not associated with neighbourhood cohesion. The prevalence of crime in the community is related to neighbourhood cohesion; the higher the number of robberies in the neighbourhood, the lower the degree of cohesion ($b=-0.022$, $se=0.006$). Comparing the standardized coefficients of the size of the ethnic in-group and the crime rate, we note that the association between in-group size and neighbourhood cohesion and the association between crime rate and neighbourhood cohesion are similar in strength (beta: 0.481 and -0.478 respectively, not shown).

Table 5.2. Effects on Neighbourhood cohesion from the MSEM models

	M1			M2			M3			M4			M5		
	B	Se	Sig	B	Se	Sig	B	Se	Sig	B	Se	Sig	B	Se	Sig
<i>Between-level</i>															
% In-group	0.413	(0.102)	***	-0.265	(0.384)		0.284	(0.171)	*	-0.164	(0.148)		-0.135	(2.287)	
Eco. deprivation	-0.006	(0.006)		-0.012	(0.008)		0.003	(0.010)		0.006	(0.008)		0.001	(0.035)	
Crime rate	-0.022	(0.006)	***	-0.013	(0.008)		-0.022	(0.006)	***	0.008	(0.010)		0.010	(0.034)	
Perceived % in-group				1.727	(0.973)	*							-0.028	(8.195)	
Perceived eco. deprivation							-0.395	(0.419)					0.212	(1.583)	
Perceived safety from crime										-0.978	(0.236)	***	-1.085	(2.440)	
<i>Indirect effect of % In-group:</i>															
Perceived % in-group				0.688	(0.400)	*							-0.011	(3.270)	
Perceived eco. deprivation							0.155	(0.171)					-0.078	(0.567)	
Perceived safety from crime										0.577	(0.158)	***	0.659	(1.461)	
<i>Indirect effect of Eco. Deprivation:</i>															
Perceived % in-group				0.005	(0.004)								0.000	(0.023)	
Perceived eco. deprivation							-0.010	(0.010)					0.005	(0.038)	
Perceived safety from crime										-0.015	(0.008)	*	-0.016	(0.033)	
<i>Indirect effect of Crime rate:</i>															
Perceived % in-group				-0.008	(0.005)								0.000	(0.039)	
Perceived eco. deprivation							-0.003	(0.003)					0.001	(0.011)	
Perceived safety from crime										-0.033	(0.009)	***	-0.037	(0.091)	

Within-level		
Perceived % in-group	0.585 (0.078) ***	0.264 (0.084) ***
Perceived eco. deprivation	-0.335 (0.038) ***	-0.145 (0.036) ***
Perceived safety from crime	-0.701 (0.039) ***	-0.618 (0.046) ***
Variance (within)	0.475 (0.031) ***	0.432 (0.028) ***
Variance (between)	0.008 (0.013)	0.003 (0.011)
		0.008 (0.012)
		0.000 (0.021)
		0.335 (0.022) ***
		0.000 (0.020)

Sources: SFSS (2012-2013); US Census Bureau (2010).
Notes: Regression coefficients with standard errors between parentheses. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed test). $N_{\text{individual}} = 2,882$; $N_{\text{neighbourhood}} = 1,062$.
The variables 'ethnic in-group size', 'economic deprivation', 'crime rate', 'age', 'income' are grand mean centred. The variance components of the empty model:
 $\text{variance}_{\text{within}}: b = 0.508/\text{se} = 0.031$ and $\text{variance}_{\text{between}}: b = 0.043/\text{se} = 0.014$.

Table 5.3. Effects on Perceived neighbourhood composition from the MSEM models

	M2			M3			M4			M5		
	Perceived % in-group			Perceived eco. deprivation			Perceived safety from crime			Perceived % in-group		
	B	Se	Sig	B	Se	Sig	B	Se	Sig	B	Se	Sig
Between-level												
% In-group	0.399	(0.031)	***	-0.393	(0.081)	***	-0.590	(0.115)	***	0.398	(0.031)	***
Eco. Deprivation	0.003	(0.002)		0.026	(0.005)	***	0.015	(0.006)	**	0.003	(0.002)	
Crime rate	-0.004	(0.002)	**	0.006	(0.005)		0.034	(0.006)	***	-0.005	(0.002)	**
Variance (within)	0.050	(0.002)	***	0.373	(0.030)	***	0.253	(0.039)	***	0.050	(0.003)	***
Variance (between)	0.002	(0.001)	***	0.030	(0.015)	**	0.033	(0.018)	*	0.003	(0.001)	***
										0.027	(0.017)	
										0.047	(0.026)	*

Sources: ASFS (2012-2013); US Census Bureau (2010).

Notes: Regression coefficients with standard errors between parentheses. * p<0.10; ** p<0.05; *** p<0.01 (two-tailed test). N_{individual} = 2,882; N_{neighbourhood} = 1,062.

As previous research has consistently shown a negative relationship between living in an economic deprived neighbourhood and social cohesion (e.g. Fieldhouse and Cutts 2010; Letki, 2008; Laurence and Heath, 2008), it is worth investigating why we do not find this negative association. Additional analyses, in which we examined the objective neighbourhood effects on every item of the latent variable, neighbourhood cohesion, separately, showed that economic deprivation is unrelated to three indicators of our latent variable neighbourhood cohesion: 'close-knit', 'getting along' and 'help' and negatively and significantly to the other two indicators. We therefore decided to perform an additional MSE-analysis in which we separate the original dependent variable into two latent dependent variables (Appendix 9). The first, neighbourhood cohesive norms, is captured by 'trust' and 'same values' and the second, attitudes towards neighbourhood cohesive behaviour, is captured by 'close-knit', 'getting along' and 'informal help'. In line with previous research, economic deprivation is negatively related to neighbourhood cohesive norms ($b=-0.015$ (standardized coefficient = -0.282), $se=0.005$; Model 1, Appendix 9), but it is unrelated to attitudes towards neighbourhood cohesive behaviour ($b=-0.004$ $se=0.005$; Model 1, Appendix 9). The effects of in-group size and the crime rate are similar for all the items separately and for both latent measures of cohesion, and similar to the found effects for the single latent measure of social cohesion (Model 2; Table 5.2). Because the factor analysis has indicated that the five indicators of neighbourhood social cohesion tap into a single latent variable and the model fit measures do not improve when using two latent variables, we continue investigating possible mediating effects of the perceived neighbourhood context using the single latent variable as our main dependent variable.

5.5.2. Structural Model: Mediating effects of Perceived neighbourhood context

Model 2 in Table 5.2 shows that both on the between-level and the within-level the perceived number of whites is positively related to neighbourhood cohesion. This implies that variation between neighbourhoods in the perceived in-group size ($b=1.727$, $se=0.973$; Model 2, Table 5.2) as well as variation between individuals in the perceived in-group size within neighbourhoods ($b=0.585$, $se=0.078$; Model 2, Table 5.2) explain neighbourhood cohesion. Furthermore, we note that the between-neighbourhood variation in perceived ethnic in-group size mediates the association between the actual in-group size and neighbourhood cohesion. After including the perceived in-group size, the main effect of the actual in-group size turns insignificant ($b=-0.265$, $se=0.384$; Model 2, Table 5.2) and more importantly, the indirect effect is significant ($b=0.688$, $se=0.400$; Model 2, Table 5.2). Even though perceived in-group size does not mediate the association between the actual crime rate and neighbourhood cohesion, the actual crime rate does account for part of the

variation in perceived in-group size. The higher the crime rate, the lower whites' estimations of the size of the in-group in their neighbourhood, on average, are ($b=-0.004$, $se=0.002$, Model 2, Table 5.3; results for control variables can be found in Appendix 10).

Model 3 shows that perceived economic deprivation only explains variation in neighbourhood cohesion between individuals ($b=-0.335$, $se=0.038$; Model 3, Table 5.2) and not between neighbourhoods ($b=-0.395$, $se=0.419$; Model 3, Table 5.2). As mediation of the relationship between the objective neighbourhood characteristics and neighbourhood cohesion can only take place at the between-level, we can conclude that perceived economic deprivation does not function as a mediating factor.⁵ Table 5.3 shows that, besides the actual degree of economic deprivation, the objective size of the in-group is also related to perceived economic deprivation: whites perceive, on average, more economic deprivation in neighbourhoods in which less other whites reside ($b=-0.393$, $se=0.081$, Model 3, Table 5.3).

Model 4 shows that both on the within-level and the between-level perceived unsafety from crime is negatively related to neighbourhood cohesion. This implies that variation between individuals in perceived unsafety from crime ($b=-0.701$, $se=0.394$; Model 4, Table 5.2) as well as variation between neighbourhoods in perceived unsafety from crime ($b=-0.978$, $se=0.236$; Model 4, Table 5.2) explain neighbourhood cohesion. Furthermore, we note that the between-neighbourhood variation in perceived unsafety from crime mediates the association between the actual crime rate and neighbourhood cohesion ($b=-0.033$, $se=0.009$; Model 4, Table 5.2). Perceived unsafety also mediates the relationships between the in-group size and neighbourhood cohesion ($b=0.577$, $se=0.158$). We also find support for an indirect effect of economic deprivation on neighbourhood cohesion via perceived unsafety ($b=-0.015$, $se=0.008$). Even though the direct relationship between economic deprivation and neighbourhood cohesion is non-significant, an indirect pathway may still exist (cf. Hayes, 2009). Model 4 (Table 5.3) also shows that economic deprivation is positively related to perceived unsafety ($b=0.015$, $se=0.006$).

In model 5, we include the three perceptions of the neighbourhood environment simultaneously. Especially the effect sizes of perceptions of the ethnic in-group size and of economic deprivation reduce. On the within level, the association between the perceived ethnic, economic and crime composition of the neighbourhood and neighbourhood cohesion do remain significant ($b=0.264$, $se=0.084$; $b=-0.145$, $se=0.036$; $b=-0.618$, $se=0.046$ respectively). At the between level, these perception no longer reach significance and standard errors of the estimates have increased considerably. This may be the result of the relatively strong correlation between the three neighbourhood perceptions. The correlation between the perceived in-group size and perceived deprivation is -0.478 ; between the perceived in-group size and perceived unsafety is -0.751 ; and between perceived deprivation and perceived

unsafety is 0.76. This may also be the result of a lack of power (i.e. lack of variation) on the between-level.

5.6. Conclusions

In this study our purpose was to investigate how the ethnic, economic and crime composition of the neighbourhood are related to neighbourhood social cohesion among whites in the United States. Moreover, by uncovering to what extent these relations run through individuals' perceptions of the ethnic, economic, and crime composition of the neighbourhood, this study aimed to expand knowledge about *why* ethnic diversity is related to social cohesion.

We find that whites living in neighbourhoods with other whites experience, on average, more neighbourhood social cohesion than whites living in neighbourhoods with non-whites. This study thus seems to support – at least when it comes to whites in the United States – the homophily-hypothesis (McPherson, Smith-Lovin and Cook, 2001) stating that people prefer to meet, mingle and live among similar others. This finding is, moreover, in line with Abascal and Baldassarri (2015) who claimed that “the collective preoccupation with diversity may have placed undue blame on non-whites and immigrants, overlooking long-standing bias on the part of the dominant group” (p. 724). The priority for researchers should perhaps thus not be ethnic diversity and its alleged harmful influence on cohesion, but on homophilic preferences among whites.

Besides living among whites, our results suggest that living in low crime communities also facilitates neighbourhood cohesion. The association between the number of whites and neighbourhood cohesion is similar in strength as the association between the prevalence of crime in the community and neighbourhood cohesion. The negative impact of crime on neighbourhood cohesion is possibly an underestimation, because the prevalence of crime is measured at the city level. Despite of our inability to account for existing variation in crime rates between neighbourhoods within cities, we already demonstrate a clear negative relationship between crime and neighbourhood cohesion. We observed that economic deprivation is only negatively associated with neighbourhood cohesive norms and not with attitudes towards neighbourhood cohesive behaviour. This is surprising in light of the fact that previous research did consistently demonstrate a negative relationship between economic deprivation and social cohesion. This may suggest that the role of the economic composition in explaining cohesion may be dependent on which dimensions of cohesion one looks at. Future research could invest in further disentangling such differential effects.

Our second aim was to examine whether individuals' perceptions of the neighbourhood, which are a more proximal cause of neighbourhood cohesion than the objective neighbourhood composition, explain the relationship between the ethnic, economic, and crime composition and neighbourhood cohesion. Perceived ethnic in-group size mediates the relationship between the actual ethnic in-group size and neighbourhood cohesion. Perceived unsafety from crime appears to be an especially important mediating factor. Not only for the objective crime rate but also for the objective ethnic in-group size, and even for the objective degree of economic deprivation. Cross-pathways thus seem to play a role in explaining the influence of the objective neighbourhood context and neighbourhood cohesion. Ethnic stereotypes linking ethnic minorities and poverty to crime may explain why neighbourhoods with a large non-white population are perceived to be more unsafe from crime. Higher feelings of unsafety in these neighbourhoods subsequently erode whites' sense of cohesion. Future research could test this theoretical mechanism directly by including measures of ethnic stereotypes into the explanatory model.

The fact that perceived economic deprivation does not mediate the relationship between the objective neighbourhood context and neighbourhood cohesion is not to say that this is not an important explanatory factor for neighbourhood cohesion. Perceived economic deprivation does account for variation in how the neighbourhood is evaluated, but between individuals and not between neighbourhoods.

Apart from the mediational role of neighbourhood perceptions, our study provides insights into how these perceptions come about. Perceptions of the size of the ethnic in-group, of economic deprivation and of crime are shaped by other characteristics than the corresponding objective neighbourhood characteristics. Whites are less likely to perceive economic deprivation when they live among other whites. Moreover, once we take into account the actual size of the white population, whites still perceive more whites in their neighbourhood when they live in low crime communities. These findings add to the body of literature explaining neighbourhood perceptions by underlining that these perceptions are based on more than the reality of a person's neighbourhood.

Due to both the expectation that different mechanisms may play a role in explaining neighbourhood cohesion among other ethnic groups and to data limitations, addressing differential neighbourhood effects across different ethnic groups was beyond the scope of this study. As such, in order to make more generic claims about the extent to which perceptions of the neighbourhood mediate the relation between the neighbourhood and neighbourhood cohesion, a promising direction for future studies therefore would be to take into account both whites and residents from other ethnic groups. Given that we had to rely on cross-sectional data, we have to be cautious in making too strong causal interpretations. Future research using longitudinal data would be better equipped to deal with both selective residential

mobility into neighbourhoods and reverse causality between neighbourhood perceptions and neighbourhood cohesion.

Our findings do not only add to the body of existing scientific knowledge concerning neighbourhood effects in general and the diversity-cohesion relationship in particular, they also provide insights relevant for policy makers. Not ethnic diversity should be on the policy agenda, but homophilic preferences among whites, as we show that differences in neighbourhood social cohesion occur between whites living among whites and whites living among non-whites. Furthermore, given that we showed that perceived unsafety mediates the harmful effects of living among non-whites, living in a deprived neighbourhood and living in a high crime community, policy makers should be imbued with a sense of urgency to stimulate projects aimed at reducing perceptions of unsafety and projects focused on combating ethnic stereotypes linking non-whites to poverty and crime among whites in the United States.

Chapter notes

1. For three tracts, in which five respondent resided, we did not have contextual information as these tracts covered a sparsely populated area in a national forest, a park and recreation area. We deleted these cases.
2. The coefficients for the neighbourhood characteristics in the model without control variables are similar to the ones presented.
3. As the measurement part of the other models are substantially similar to the ones presented, we decided to present the measurement part of Model 1 which includes only the objective neighbourhood characteristics and Model 5 which includes all the perceived neighbourhood characteristics.
4. As an additional reliability analysis, we assessed the convergent validity of the three latent variables on the basis of the Cronbach's alpha and the corrected item-to-total correlations (on 1-level). The Cronbach's alpha for neighbourhood social cohesion is 0.88, with item-to-total correlations ranging from 0.68 to 0.74. For perceived economic deprivation, the Cronbach's alpha is 0.74, with item-to-total correlations ranging from 0.45 to 0.67. The Cronbach's alpha for perceived unsafety from crime is 0.72, with item-to-total correlations ranging from 0.50 to 0.64.
5. Additional analyses showed that perceived economic deprivation did not mediate the relationship between the neighbourhood context and neighbourhood cohesion either when we operationalized neighbourhood cohesion into the two latent variables, neighbourhood cohesive norms and attitudes towards neighbourhood cohesive behaviour.



6

WHERE DOES ETHNIC DIVERSITY AFFECT SOCIAL TRUST? HOW THE SCALE AND THE TYPE OF BOUNDARY OF A RESIDENTIAL ENVIRONMENT INFLUENCE THE DIVERSITY-TRUST RELATIONSHIP*

* A slightly different version is currently under review at an international journal
Co-author is Jochem Tolsma

6.1. Introduction

In the wake of ongoing immigration to western countries, researchers have started investigating the consequences of increasing ethnic diversity on social cohesion within these societies. This field of research exploded after Putnam (2007) claimed that ethnic diversity erodes social cohesion within as well as between ethnic groups. Despite the substantive number of studies investigating the supposed negative influence of ethnic diversity on social cohesion, there is to date no universal empirical consensus about the existence of such a negative relationship (cf. Schaeffer, 2014; Van der Meer and Tolsma, 2014). The use of different research designs can be identified as one of the underlying causes for these mixed results. These prior studies tested their expectations within various geographic scales (e.g. from regions to neighbourhoods) and used different means of defining these localities (e.g. by postcode area or some other administrative unit).

Western countries are characterized by macro-scale segregation – ethnic minorities predominantly live in the big cities –, by meso-scale segregation – they are concentrated in certain districts – and by micro-scale segregation – even within districts some neighbourhoods and even some streets are more ‘popular’ for specific ethnic groups than others (Musterd, 2005). Figure 6.1 illustrates this for the Netherlands by showing how non-western ethnic minorities are unequally distributed across municipalities, districts and neighbourhoods within the province South Holland.¹ The observed degree of ethnic diversity thus varies depending on the chosen geographical design. In studying the relationship between ethnic diversity and social cohesion, researchers should, ideally, define the ‘true causally relevant’ geographic context based on theory (Roux and Mair, 2010). Unfortunately, there has been little to no theorising on the geographical scale within which negative effects of ethnic diversity can be expected. Previous studies have taken spatially bounded administrative units as the relevant local environment. The conventional decision to focus on these administrative units is, however, mainly based on tradition and availability of secondary data rather than on theory (Van der Meer and Tolsma, 2014).

This approach has three drawbacks. First, administrative units vary greatly in scale. To illustrate this point, a map of the administrative districts (*wijken*) of Amsterdam is presented in Figure 6.2. The smallest district in the city, the centre district, covers 8 square kilometres, whereas the largest district, the northern district, extends over 50 square kilometres. Second, the conventional use of administrative units ignores the proximity of different units to one another. The majority of research on the ethnic diversity-cohesion relationship has neglected the possible impact of adjacent and nearby neighbourhoods. This may not be a problem for, say, Resident A who lives in the centre of a large district, but it may be a problem for Resident B who lives at the periphery of his/her own smaller district (see Figure 6.2). The adjacent

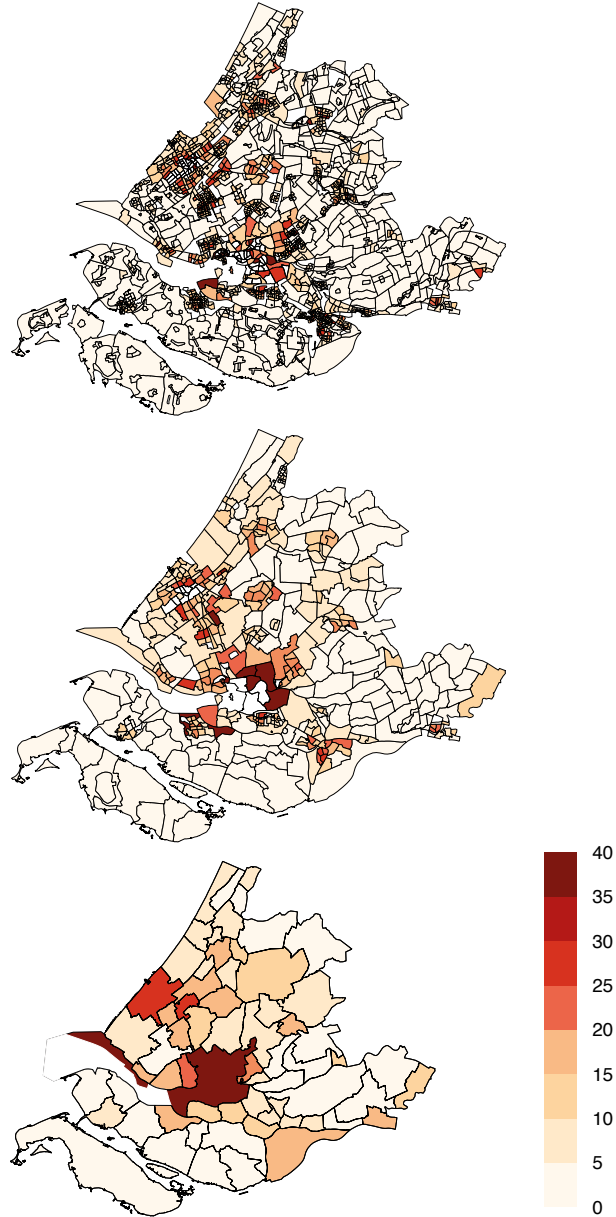
districts may differ greatly from a resident's own in their level of ethnic diversity. Third, the traditional approach neglects variations in the ethnic composition within administrative units. This may be problematic when the scale of segregation is smaller than the smallest available administrative unit (Reardon et al. 2008). Even though Resident A lives in the centre of a large district, it is unclear whether the ethnic composition of the egocentric environment (depicted by the circle around him/her in Figure 6.2) is the same as that of the whole administrative district in which s/he resides.

Even though these drawbacks of relying on administrative units are well-known in related fields, such as geography and criminology (e.g. Johnston and Sidaway, 2015; Hipp, 2007), few studies have addressed them within the field studying the diversity-cohesion relationship (cf. Tolsma and Van der Meer, 2017; Dinesen and Sønderskov, 2015; Sluiter, Tolsma and Scheepers, 2015). Our study offers new insights by assessing the impact of scale – defined by geographical area – on the relationship between ethnic diversity and two attitudinal indicators of social cohesion (cf. Van der Meer and Tolsma, 2014): trust in neighbours and generalised trust. To this end, we use a state-of-the-art egocentric neighbourhood approach (Hipp and Boessen, 2013), in which researchers define their residential units of analysis as overlapping concentric circles with individual residents at the centre of each. This approach overcomes the aforementioned drawbacks of using administrative units, because these egocentric neighbourhoods (egohoods) are equal in size for every resident; they cover the area most proximal to the resident; and they can be varied in size, from an area of a few streets to a whole municipality (see also Östh, Malmberg, and Andersson (2014) for egocentric neighbourhoods based on population size).

In addition to capturing ethnic diversity within these egohoods, we are the first to do so while restricting the used area to the administrative districts in which the individuals reside. We thus combine the traditional approach of using administrative units with the novel approach of using egocentric neighbourhoods. The resulting restricted egohoods are a valuable extension in the assessment of the impact of scale on the diversity-cohesion relationship, because administrative units can have clear demarcation lines, such as roads and rivers. These 'natural' boundaries are, in turn, important for residents' perception of their neighbourhood (Jason and Glenwick, 2016; Lohman and McMurran, 2009). Besides the impact of scale, we thus examine the impact of boundary – defined by distance (i.e. egohoods) or administratively defined (i.e. restricted egohoods) – on the relationship between diversity and cohesion.

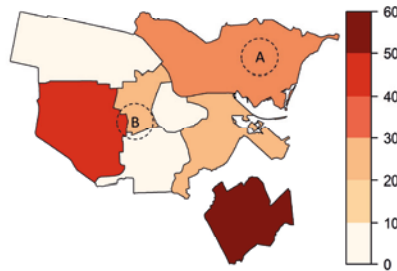
We use grid data at a very high resolution, namely surface areas of 100 x 100 metres (Statistics Netherlands, 2011), to capture the degree of ethnic diversity within egohoods and restricted egohoods of varying sizes. These egocentric neighbourhoods are constructed for a sample of native Dutch respondents from the first wave of the Netherlands Longitudinal Life course Survey (NELLS; De Graaf et al, 2010).

Figure 6.1. Percentage of non-western minorities in South Holland – neighbourhoods, districts and municipalities



Source: Statistics Netherlands (2014b)

Figure 6.2. The percentage of non-western ethnic minorities in the districts of Amsterdam



Note: Resident A lives in the centre of a large district, whereas Resident B lives at the periphery of his/her own smaller district

Source: Statistics Netherlands (2014b)

On the basis of this enriched dataset, we aim to develop knowledge as to *where* diversity affects cohesion by answering the following research question: to what extent does the scale and the type of boundary of the residential environment impact the found relationship between ethnic diversity and social trust?

6.2. Expectations

6.2.1. Diversity and Trust

The availability of in-group and out-group members affects affiliations within the neighbourhood (Blau, 1994). For native Dutch, more ethnic diversity is related to fewer contact opportunities with coethnic neighbours and with greater opportunity for contact with non-coethnic neighbours. Because people prefer to mingle with similar others (McPherson, Smith-Lovin and Cook, 2001), people living in ethnically diverse environments are likely to have less contact with their neighbours than people living in ethnically homogenous environments. Less neighbourly contact is, in turn, associated with lower levels of trust, because contact is an important means of reducing social distance between people and fostering a shared neighbourhood identity, and thereby a sense of group belonging (Vroome, Hooghe and Marien, 2013).

According to group threat theory (cf. Blalock, 1967), ethnic diversity may furthermore foster competition over scarce material or symbolic resources between ethnic groups (Bobo 1988; Sears 1988). As a consequence of this (perceived) competition, people are more likely to experience feelings of ethnic threat in ethnically diverse neighbourhoods (e.g. Savelkoul, Gesthuizen and Scheepers, 2011). Perceptions of ethnic threat undermine interethnic trust as people do not count on the ethnic out-group with conflicting interests to act in a beneficial or helpful way (Tjosvold, 1988). As feelings of interethnic trust could nourish intra-ethnic trust, these feelings of ethnic threat could diminish trust more generally (Hooghe, Reeskens, Stolle and Trappers, 2009; Putnam, 2007).

Moreover, ethnic diversity in an individual's living environment may result in a diversity of social norms and values along ethnic lines, thereby making what is appropriate according to the broader community unclear (Öberg, Oskarsson and Svensson, 2011; March and Olsen, 2006). This uncertainty about the existence of a shared logic of behavioural appropriateness makes those living in ethnically diverse environments more likely to experience anomie (Smith and Bohm, 2008; Seeman, 1959). Feelings of anomie thereby represent a form of social distance (Wu, Hou and Schimmele, 2011). Individuals that experience anomie as social distance between themselves and society are less likely to display high levels of trust (Vroome et al., 2013).

Thus, our general expectation is that ethnic diversity is negatively related to trust in neighbours and generalized trust, because there is less contact with neighbours and more feelings of threat and anomie in ethnically diverse environments than in ethnically homogeneous environments.

6.2.2. Scale of the residential environment

In neighbourhood effects research, the implicit assumption is often that the influence of the residential environment on people's behaviour and attitudes stems from their interaction with this environment, and the subsequent meaning they attach to it (Shinn and Toohey, 2003; Sampson, Morenoff and Gannon-Rowley, 2002). If the impact of the residential environment indeed rests on people's perceptions of and experiences in this context, it is imperative to examine what this residential environment looks like (Coulton et al., 2013). Different aspects of the residential environment could, however, operate on different geographical scales, and this could subsequently affect people's attitudes and behaviour (Sharkey and Faber, 2014; Coulton, Jennings and Chan, 2013; Forrest and Kearns, 2001). It is therefore important to assess what geographical area is most relevant to the impact of neighbourhood characteristics on individual outcomes in general, and of ethnic diversity on social trust in particular. The majority of existing research has, however, neglected to do so.

The few authors to have theoretically justified the chosen unit of analysis – most commonly the administrative neighbourhood – have stated that the smaller the locality, the more residents identify with this locality, and the more they are aware of its ethnic composition. Presumably, the stronger the identification with the locality and the greater the awareness of its ethnic composition, the more likely it is that these residents are affected by its ethnic composition (Hagendoorn, 2009). This seems to be in line with research focussed on mapping resident-defined neighbourhoods, which has established that the area residents perceive to constitute their neighbourhood is substantially smaller than commonly used administrative neighbourhoods, such as census tracts and postcode areas (Gundelach and Freitag, 2014; Bakker and Dekker, 2012; Lohmann and McMurran, 2009; Coulton, Korbin, Chan and Su, 2001). It also seems to be consistent with research pointing to the importance of physical propinquity for the formation of ties within the residential environment (Hipp and Perrin, 2009). While acknowledging that theorisation on the most relevant scale for examining the diversity-trust relationship is scarce, our expectation is that the presupposed negative relationship between ethnic diversity and social trust is stronger the smaller the geographical unit of analysis.

To our knowledge, only three studies have put this expectation to empirical scrutiny. These studies, moreover, led to mixed findings. Dinesen and Sønderskov (2015) showed that in Denmark, people are indeed mostly affected by ethnic diversity within the micro-residential environment. Social cohesion is lower when ethnic diversity is high within 80 metres of people's homes. For the Netherlands, researchers have conversely demonstrated that ethnic diversity within 4,000 to 8,500 metres from people's homes is most negatively related to social cohesion as opposed to diversity closer to home (Tolsma and Van der Meer, 2017; Sluiter et al, 2015).

These findings do not necessarily contradict each other, as they examined different forms of social cohesion and ethnic diversity within a different range of scales. Unlike generalised trust, which was studied in the Danish context, the indicators of social cohesion under scrutiny in the Dutch context were restricted in target and scope (cf. Van der Meer and Tolsma, 2014). Their focus was on objection to neighbours with a different ethnic background (Sluiter et al., 2015) and on trust in neighbours (Tolsma and Van der Meer, 2017) – indicators of cohesion that are targeted at the members of the neighbourhood and that are inherently bound to a specific geographical area. Furthermore, in the Danish context residential environments with radii ranging from 80 to 2,500 metres were examined, whereas in the Dutch context the radii ranged from 200 to 10,000 metres.

Our contribution helps to clarify these mixed findings by studying the relationship between ethnic diversity and both trust in neighbours and generalised trust within residential environments with radii ranging from 100 to 10,000 metres.

6.2.3. Type of boundary of the residential environment

The discrepancy between the traditional approach of using administrative units and the novel approach of using egocentric neighbourhoods manifests itself not only in the scale, but also in the type of boundary (Minnery, Knight, Byrne and Spencer, 2009). The use of egohoods departs from the premise that residents place themselves at the centre of their neighbourhood. The boundaries of these residential environments are thus defined by the distance to the borders of the concentric circle drawn around people's residence (Hipp and Boessen, 2013). As people tend to place their own residence in the centre of their residential environment (Grannis, 2009; Coulton et al., 2001) and are inclined to move within a concentric circle around their residence when they go shopping or run errands (Moudon et al., 2006; Sastry, Pebley and Zonta, 2002), this conceptualization of the residential environment seems to reflect people's perception of their neighbourhood more closely than any administratively defined boundary.

Research has, however, also established that 'natural' boundaries, such as parks, rivers and major roads, are frequently seen as residential boundaries when people are asked to map their own residential neighbourhood (Jason and Glenwick, 2016; Lohman and McMurrin, 2009). Administrative units in the Netherlands often follow such demarcation lines. As well as assessing the diversity-trust relationship within egohoods, we additionally restrict the egohoods to the administrative districts in which the individuals reside. We thus use the administrative boundaries as a proxy for natural boundaries. These restricted egohoods may be an even better geographical area in which to study neighbourhood effects than the unrestricted ones, because they place residents at the centre of their neighbourhood while accounting for natural boundaries whenever necessary. Our expectation is thus that the presupposed negative relationship between ethnic diversity and social trust is stronger within restricted egohoods than within unrestricted egohoods.

To our knowledge, only one study has empirically scrutinised the impact of the type of boundary on the diversity-cohesion relationship. Tolsma and Van der Meer (2017) compared unrestricted egohoods to standard administrative units and found that the diversity-cohesion relationship does not differ substantially between the residential environments with distance-defined boundaries (i.e. egohoods) and those with administratively defined boundaries (i.e. administrative units). This finding calls for further clarification. In the former approach, residents are placed at the centre of their residential environment, but natural boundaries are overlooked; and in the latter approach, natural boundaries are taken into consideration but residents are not placed at the centre of their residential environment. In contrast, we place residents at the centre of their neighbourhood and simultaneously account for natural boundaries whenever necessary.

6.3. Data and Methods

This study uses data on native Dutch respondents from the first wave of the Netherlands Longitudinal Life course Survey (2010; NWO nr.: 48006001). For the collection of the NELLS data, a two-stage stratified sampling was applied. The first stage was a quasi-random selection of 35 municipalities and the second stage was a random selection from the population registry based on age (15-45 years old) and country of birth (De Graaf et al., 2010). In the first wave, 2556 native Dutch individuals are interviewed. The contextual data on ethnic diversity come from Statistics Netherlands who provide information for every 100 x 100 metres surface area in the Netherlands (Statistics Netherlands, 2011). Contextual information is only provided by Statistics Netherlands when at least ten individuals live in a 100 x 100 metres area. We deleted 149 respondents for whom we did not have contextual data due to this privacy regulation.

6.3.1. Social Trust

The dependent variables are trust in neighbours and generalized trust. Trust in neighbours is measured using the following statement: 'the people living in this neighbourhood can be trusted'. The answer categories for this item are: 1. 'not true at all', 2. 'not very true', 3. 'somewhat true', 4. 'very true'. Generalized trust is measured with a mean score on the basis of the following three statements: 'you can't be too careful in dealing with people', 'if you trust too easily, people will take advantage of you, and 'you will often be cheated when you help others' (following Hooghe et al., 2009). The answer categories to these three items are: 1. 'strongly agree', 2. 'somewhat agree', 3. 'neither agree or disagree', 4. 'somewhat disagree', 5. 'strongly disagree'. The reliability of the mean score is acceptable (Cronbach's $\alpha = 0.73$).

The dependent variables are constructed in a way that higher values reflect higher levels of trust. Moreover, they are z-standardized in order to facilitate the comparison of context effects across both dependent variables. Respondents with missing values on one or both types of trust are excluded list-wisely (94 respondents).

6.3.2. Ethnic Diversity

We use the ethnic out-group size as our indicator of ethnic diversity and it is operationalized as the percentage of non-western immigrants in the neighbourhood. Following the definition of Statistics Netherlands, people are considered to be non-western immigrants when at least one of their parents is born in a non-western country. About twelve percent of the Dutch population is considered to be of non-western descent (Statistics Netherlands, 2014a). The largest non-western immigrant groups in the Netherlands are Moroccans (2.2%), Turks (2.4%), Surinamese and Antilleans (2.9%). We include the ethnic out-group size as a proportion for reasons of interpretability of the estimates.

6.3.3. Neighbourhood control variables

To correctly assess the relationship between ethnic diversity and trust, we control for other known neighbourhood determinants of trust that may be connected to ethnic diversity. We include two indicators for the economic composition of the residential environment: economic deprivation and economic inequality. Economic deprivation is measured on the basis of the average housing value in the area. These housing values are measured in 100,000 Euros. We recoded this measure, so that a higher score on this indicator of economic deprivation corresponds to a higher degree of economic deprivation. For economic inequality, we use the Gini-index, which indicates the extent to which the geographical distribution of housing values within a particular area deviates from a perfectly equal distribution. A score of zero on this index reflects perfect socioeconomic equality in an area, whereas a score of one on this index expresses perfect socioeconomic inequality in an area. As previous research has shown that ethnic segregation may have an effect on social cohesion independent of the degree of ethnic diversity (Uslaner, 2012), we also include ethnic segregation in our analyses. Ethnic segregation is measured using a two-group dissimilarity index. This index can be interpreted as the proportion of a group that would need to move in order to create a uniform distribution of the population. This operationalization is based on the distinction between native Dutch individuals and non-western immigrants.

6.3.4. Individual-level control variables

To take into account possible neighbourhood composition effects, we also control for several known determinants of trust at the individual level. Gender is included with males coded as 1 and females as 0. Age and education are measured in years. Monthly household income is also included. The midpoint values of sixteen possible income ranges are used (lowest category gets a value of €75, - and the highest category a value of €7000,-). Labour market position is operationalized using three categories: 'employed', 'unemployed' and 'non-employed'. With respect to religiosity, church attendance is taken up in the analyses (1.'never', 2.'1-2 times a year', 3.'3-11 times a year', 4.'once a month', 5.'2-3 times a month', 6.'every week', and 7.'several times a week'). Household composition is constructed on the basis of marital/cohabiting status (single versus married/cohabiting) and on whether or not respondents have children, resulting in six categories: 'single, no children', 'single, no children living at home', 'single, children living at home', 'couple, no children', 'couple, no children living at home', and 'couple, children living at home'. The missing values on the continuous covariates, income and education, are replaced with the grand mean, and a dummy variable referring to the missing values is added to the analyses. A category 'missing' is added to the categorical covariate – labour market position.²

The descriptive statistics for our sample of 2313 native Dutch respondents can be found in Table 6.1.

Table 6.1. Descriptive statistics

	Mean	SD	Min	Max		Mean	SD	Min	Max
Individual characteristics									
<i>Dependent variables</i>									
Trust neighbours	3.26	0.74	1	4	Contextual characteristics <i>Egohood 2250m</i>	0.11	0.09	0.00	0.56
Generalized trust	9.29	2.12	3	15					
<i>Control variables</i>									
Gender (REF: female)	0.46				<i>Control variables</i>	0.25	0.06	0.16	0.73
Age	32.23	8.90	15	47					
Education	10.64	3.21	4	16.50					
Education missing (REF: non-miss)	0.02								
Income	2225	1394	75	7000	<i>Control variables</i>	0.10	0.09	0.00	0.67
Income missing (REF: non-miss)	0.09								
Church attendance	1.96	1.54	1	7					
Labour market position					<i>Egohood restricted to district boundaries 2250m</i>	0.25	0.07	0.00	0.73
- Employed	0.87								
- Non-employed	0.06								
- Unemployed	0.06								
- Missing	0.02				<i>Egohood restricted to district boundaries 2250m</i>	2.22	0.48	1.06	4.31
Household composition									
- Single, no kids	0.34								
- Single, no kids at home	0.01								
- Single, kids at home	0.04				<i>Egohood restricted to district boundaries 2250m</i>	0.18	0.05	0.05	0.45
- Couple, no kids	0.18								
- Couple, no kids at home	0.01								
- Couple, kids at home	0.42								

Sources: *NELLS wave 1 and Statistics Netherlands (2011)*.

Notes: raw descriptive statistics for the neighbourhood characteristics within egohoods with different sizes are available upon request. N = 2313.

6.3.5. Methods

To assess the role of scale in the found relationship between diversity and trust, we conceptualise people's local environment as egohoods (Dinesen and Sønderskov, 2015; Hipp and Boessen, 2013). Egohoods are geographical areas defined by the researcher as concentric circles, with the individual residents at the centre of distance-defined radii (Hipp & Boessen, 2013). We measure ethnic diversity as well as the other neighbourhood characteristics for the 100 x 100 metres grid cell and for egohoods with a radius of 250m, 500m, 750m, 1500m, 2250m, 3000m, 4000m, 5000m, 7500m and 10,000m.³

In addition, we measure ethnic diversity as well as the other neighbourhood characteristics for egohoods with the same range of radii where we restrict the used area to the administrative districts ('*wijken*') to which the respondent belongs.⁴ For Respondent B in Figure 6.2, this would mean that only the area that falls within the egocentric circle as well as within the district in which he resides is taken into account.⁵

We estimate spatial error models with the *spdep* package in R 3.3.3. to take into account spatial error correlation and not to underestimate the standard error of our contextual effects.⁶ We assume in these models that the error term of a respondent correlates similarly with all other respondents living in his or her egohood. This assumption is similar to the assumption of multi-level models for nested data. To compare our findings to the traditional way of analysing the association between ethnic diversity and social cohesion, we also estimate multilevel linear regression models using ethnic diversity at the administrative neighbourhood, district and municipality level (Statistics Netherlands, 2009; Snijders and Bosker, 1999). To this end, we used the *lme4* package in R 3.3.3.

6.4. Results

Table 6.2 and Table 6.3 summarize the impact of ethnic diversity on trust in neighbours and on generalized trust for the grid cell, egohoods as well as egohoods restricted to district boundaries. The neighbourhood-level and individual-level control variables are included in the presented models (see Appendix 11 and Appendix 12 for the neighbourhood control variables and Appendix 13 for the individual control variables).⁷ The inclusion of these control variables do not alter our main findings.

Before going into the findings we briefly discuss the results based on the use of administrative neighbourhoods, districts and municipalities (see Appendix 14), as a means to set our study alongside the existing research into the diversity-cohesion relationship. In accordance with previous studies based on the traditional approach using administrative units, we find a more consistent negative association between ethnic diversity and trust in neighbours than between ethnic diversity and generalized

Table 6.2. Spatial error models explaining trust in neighbours

		Egohoods										
		Grid cell	250	500	750	1500	2250	3000	4000	5000	7500	10000
Ethnic diversity	B	-1,473	-2,258	-2,224	-2,074	-1,866	-1,530	-1,555	-1,138	-1,180	-0,308	-0,112
	SE	0,163	0,207	0,218	0,226	0,258	0,288	0,349	0,419	0,481	0,612	0,679
Egohoods restricted by administrative district boundaries												
Ethnic diversity	B		250	500	750	1500	2250	3000	4000	5000	7500	10000
			-2,278	-2,271	-2,163	-2,157	-2,059	-2,010	-1,966	-1,953	-1,947	-1,993
	SE		0,207	0,218	0,225	0,243	0,249	0,252	0,260	0,262	0,270	0,260

Sources: *NELLS wave 1 and Statistics Netherlands (2011)*.
Notes: bold coefficients are significant at $p < 0.05$ (two-tailed test). The neighbourhood-level and individual-level control variables are included in the presented models.
N = 2313.

trust (cf. Van der Meer and Tolsma, 2014). Diversity is negatively related to trust in neighbours at the neighbourhood, district and municipality level, whereas diversity is only negatively related to generalized trust at the neighbourhood level. The relationship between diversity and trust in neighbours is of similar strength at the neighbourhood and municipality level.

6.4.1. Scale of the residential environment

Table 6.2 shows, in line with our first expectation and with previous research, that ethnic diversity is negatively related to trust in neighbours for the 100m by 100m grid cell as well as for egohoods with radii ranging from 250 metres to 5,000 metres. Only for the two largest egohoods with radii of 7,500 and 10,000 metres, there is no significant association between diversity and trust in neighbours. Looking at the results for egohoods restricted by district boundaries, we note that across the whole range of egohoods the negative relationship between ethnic diversity and trust in neighbours is significant.⁸ Similar to trust in neighbours, we expected to find a negative effect of ethnic diversity on generalized trust. Only for the grid cell and the smallest unrestricted and restricted egohoods with radii of 250 metres this is the case (Table 6.3).

This finding is in line with our second expectation, namely that the negative relationship between ethnic diversity and social cohesion is stronger the smaller the geographical unit of analysis is. More specifically, generalized trust is only affected by ethnic diversity within the small-scale residential environments. In contrast to the results based on the administrative approach, we also note for trust in neighbours that the effect size of ethnic diversity decreases when the size of the egohood increases ($b = -2.26$, $se = 0.21$ for an egohood with a radius of 250 metres and $b = -1.18$, $se = 0.48$ for an egohood with a radius of 5,000 metres, Table 6.2). This pattern is also visible, albeit less clear, for the egohoods restricted by administrative boundaries where the effect size ranges from -2.28 ($se = 0.21$) to -1.99 ($se = 0.26$). Contradictory to this pattern, we find that the relationship between ethnic diversity and both types of trust within the smallest geographical unit of analysis, the 100 by 100 metres grid cell, is weaker than within the second-smallest unit, the egohood with a radius of 250 metres (for trust in neighbours: $b = -1.47$, $se = 0.16$ compared to $b = -2.26$, $se = 0.21$; for generalized trust: $b = -0.33$, $se = 0.17$ compared to $b = -0.59$, $se = 0.21$).⁹ The most relevant geographic context to study the consequences of ethnic diversity for social cohesion in the Netherlands thus appears to be small (250 metres radius), but not necessarily the smallest (100 by 100 metres grid cell).¹⁰ This finding is contrary to that of Dinesen and Sønderskov (2015), which demonstrated for Denmark that the negative relationship between diversity and generalised trust is strongest in the smallest geographic context, namely an egohood with an 80-metre radius.

Table 6.3. Spatial error models explaining trust in neighbours

		Egohoods										
		Grid cell	250	500	750	1500	2250	3000	4000	5000	7500	10000
Ethnic diversity	B	-0,327	-0,594	-0,341	-0,212	-0,247	-0,242	-0,262	-0,283	-0,341	-0,021	0,139
	SE	0,167	0,207	0,230	0,246	0,266	0,285	0,323	0,374	0,433	0,547	0,627
Egohoods restricted by administrative district boundaries												
Ethnic diversity	B		250	500	750	1500	2250	3000	4000	5000	7500	10000
			-0,568	-0,382	-0,285	-0,287	-0,219	-0,267	-0,252	-0,240	-0,190	-0,136
	SE		0,207	0,230	0,245	0,252	0,256	0,260	0,267	0,276	0,285	0,284

Sources: *NELLS wave 1 and Statistics Netherlands (2011)*.
Notes: bold coefficients are significant at $p < 0.05$ (two-tailed test). The neighbourhood-level and individual-level control variables are included in the presented models.
N = 2313.

6.4.2. Type of boundary of the residential environment

Our third expectation was that the negative relationship between ethnic diversity and social cohesion is stronger within restricted egohoods than within unrestricted egohoods. For trust in neighbours, we observe for egohoods with radii up to 750 metres that the impact of ethnic diversity does not differ much between egohoods restricted by district boundaries and unrestricted egohoods (Table 6.2). For the egohoods with radii over 750 metres, the relationship between diversity and trust in neighbours becomes stronger for egohoods restricted to administrative boundaries than for unrestricted egohoods with increasing radii. As the mean distance from the centroid of a district to its boundary is 2,000 metres, this is for restricted egohoods with a radius larger than 2,250 metres most likely a consequence of the fact that in many cases the district boundaries do not extend past the egohood boundaries. These large restricted egohoods are therefore of similar sizes as the smaller restricted egohoods with a radius of 2,250 metres. For generalized trust, we observe that the impact of ethnic diversity within the unrestricted egohood with a radius of 250 metres (i.e. the only egohood size for which we found a significant association) is stronger than within the restricted egohood with a radius of 250 metres (Table 6.3). All in all, we do not find much support for our expectation combining the egohood approach with natural demarcation lines would lead to a stronger diversity-cohesion relationship.

6.4.3. Scale and boundary for the neighbourhood controls

In line with previous research, we find that people hold less trust in neighbours and less generalized trust in economically deprived residential environments than in economically affluent residential environments (Appendix 11 and Appendix 12; e.g. Fieldhouse and Cutts, 2010). Unlike the relationship between ethnic diversity and trust, the association between deprivation and trust becomes stronger with increasing size of the residential environment. Moreover, the impact of deprivation on trust in neighbours is stronger in the unrestricted egohoods than in the restricted egohoods. The other indicator of the economic composition of the residential environment, economic inequality is only negatively related to trust in neighbours for the two largest unrestricted egohoods (radii of 7,500 and 10,000 metres; Appendix 11). This possibly indicates that the most relevant geographical context to study the influence of the economic composition of the neighbourhood is larger than for ethnic diversity.

In ethnically segregated environments people hold more trust in neighbours but less generalized trust than in integrated environments (Appendix 11 and Appendix 12). There are competing expectations about the relationship between segregation and these different types of trust that might help to understand this finding. Combining the idea that people prefer to interact with people who are similar to them (McPherson et al., 2001) with the presumption that contact with coethnic neighbours is easier in segregated environment where coethnics reside in the same parts, there may be

more neighbourly contact in segregated environments. This neighbourly contact subsequently increases trust in neighbours. The visibility of ethnic out-groups is simultaneously heightened in ethnically segregated environments (Van der Waal, De Koster and Achterberg, 2013), as a result of which feelings of ethnic threat and anomie increase (Biggs and Knauss, 2012). Threat and anomie, in turn, decrease generalized trust. Lastly, the association between segregation and trust becomes stronger with increasing size of the residential environment, which possibly indicates that the most relevant geographical context to study the influence of ethnic segregation is also larger than for ethnic diversity.

6.5. Conclusions

In this study more knowledge is developed as to *where* ethnic diversity affects social cohesion among the native Dutch population. The vast majority of existing studies on the diversity-trust relationship have traditionally treated the relevant local environment in terms of spatially bounded administrative units, without an explicit theoretical foundation for doing so. We contribute to the field by assessing the impact of scale (defined by geographical area), in combination with the impact of the type of boundary (defined by distance or an administrative unit) on the relationship between ethnic diversity and two attitudinal indicators of social cohesion: trust in neighbours and generalized trust.

In line with existing research, we have uncovered a negative relationship between ethnic diversity and trust, which is more consistent and stronger for trust in neighbours than for generalised trust (Schaffer, 2014a; Van der Meer and Tolsma, 2014). However, this is not to say that the geographical design of a study does not affect results. Whereas we have not found a great deal of evidence for the impact of the type of boundary of the residential environment on the diversity-trust relationship, we have discovered that the scale of the residential environment has a substantial influence on the diversity-trust relationship. We have shown that only within small-scale residential environments (egohoods with a radius smaller than 250 metres or administrative neighbourhoods) ethnic diversity is negatively associated with generalised trust. We would have thus overlooked this association had we relied on the traditional approach using administrative districts or municipalities. Ethnic diversity is, on the other hand, consistently related to trust in neighbours across different levels of aggregation. But also for trust in neighbours, ethnic diversity has a weaker impact in large-scale egohoods than in small-scale ones. This pattern is not picked up when using the traditional administrative approach.

Our finding that the smaller the local living environment under investigation, the stronger the negative association between ethnic diversity and social trust seems to

support the scarce theorisation in the field studying the diversity-trust relationship. People are said to be more aware of and more affected by the ethnic composition of the smallest locality, because they identify most strongly with that locality. Notwithstanding this general pattern, we have also shown, in contrast to Dineson and Sønderskov (2015), that there is a limit to how small the examined locality should be. The relationship appeared weaker in the 100 x 100 metres grid cells than in the egohoods with a radius of 250 metres. The most relevant geographic context in which to investigate the relationship between ethnic diversity and social trust are egohoods with a radius larger than 100 metres but no greater than 250 metres. Another reason we recommend the study of the diversity-trust relationship within these small-scale residential environments is that ethnic segregation does not affect social trust within them, and consequently does not interfere with the ethnic diversity effect.

All in all, our study highlights the need for future studies to pay explicit attention to the sensitivity of their findings to the geographical context used in their analyses. We specifically bring the field forward with respect to the *where*-question by explaining the divergent findings of previous studies. Trust restricted in target and scope to the neighbourhood, as investigated by Sluiter and colleagues (2015) and Tolsma and Van der Meer (2017) is – in the Dutch context – less affected by the level of aggregation than trust unrestricted in target and scope, as examined by Dineson and Sønderskov (2015). A promising direction for future research would be to examine the impact of scale on the relationship between ethnic diversity and aspects of social cohesion that vary, not in target and scope but in mode, such as in behavioural versus attitudinal mode. More investigation is further warranted about the impact of scale on the association between other neighbourhood characteristics and social cohesion. Our study takes a first step by showing in an exploratory fashion that the most relevant scale for the economic composition of the residential environment seems to be substantially larger than for ethnic diversity. Whether the extent to which the most relevant geographic context in which to examine the relationship between ethnic diversity and social trust differs for different groups of residents was beyond the scope of this research. However, as research on resident-defined mapping of neighbourhood environments has already indicated that people across sociodemographic groups perceive their residential environments to be of different sizes (Coulton et al., 2013; Galster, 2001), this contribution is invaluable for shedding further light on the conditions under which to expect a negative influence of ethnic diversity on social trust.

Chapter notes

1. It is unfeasible to visualize the pattern of ethnic segregation at various scales for the whole country, therefore we show this pattern only for one province. We use the province of South Holland as an example, because this province contains several large cities, such as The Hague and Rotterdam, as well as smaller cities and rural areas.
2. Replacing the missing values through multiple imputation with the R package Amelia II (Honaker, King, and Blackwell, 2015) leads to similar results.
3. As we use the 100m x 100m surface areas to measure ethnic segregation and economic inequality within these egohoods, these two neighbourhood-level control variables cannot be included in the models based on the 100m x 100m grid cell.
4. These districts are administrative areas defined by Statistics Netherlands. These areas are smaller than municipalities and larger than the lowest spatial classification of Statistics Netherlands (*'buurten'*).
5. We cannot construct the 100m x 100m grid cell restricted to administrative boundaries, because we do not have information about variation in the ethnic (and economic) composition at a smaller scale (100m x 100m grid cells are the smallest unit for which Statistics Netherlands provides information).
6. Analysing standard 1-level linear regression models leads to similar results.
7. Given the substantial number of models we estimated and given the fact that our focus is on the neighbourhood effects, in particular the diversity effect, we opted to only provide the estimates for the individual-level control variables for egohoods with a radius of 2,250 metres. The estimates for the individual-level control variable for egohoods with different radii are available upon request.
8. This is likely a consequence of the fact that in many cases the district boundaries do not extend past the radii of 7,500 and 10,000 metres causing these local environment to be of similar sizes as the by district boundaries restricted egohoods with a radius of 5,000 metres.
9. Additional analysis showed that this cannot be explained by the fact that within these smallest geographical units we could not control for ethnic segregation and economic inequality.
10. We did not perform any statistical tests to assess whether the estimates statistically differ from one another, because the comparison of coefficient sizes in non-nested models is not straightforward. We did consider the AIC-scores to assess model fit across the restricted and unrestricted egohoods of different sizes (Burnham and Anderson 2004). For both trust in neighbours and generalized trust, the models using the unrestricted and restricted egohoods with a radius of 250 metres are the best fitting models (results not shown).





APPENDIX

Appendix 1. Effects of control variables on trust among native Dutch

	Trust in Neighbours			Generalized Trust		
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
<i>Time-invariant</i>						
(Intercept)	2.429	(0.126) ***	2.781	(0.173) ***	6.248	(0.357) ***
Wave (REF: wave 1)	0.004	(0.049)	0.008	(0.048)	0.085	(0.125)
<i>Neighbourhood-level controls</i>						
Ethnic segregation	0.133	(0.148)	0.098	(0.139)	-0.571	(0.421)
Economic deprivation	-0.148	(0.032) ***	-0.135	(0.030) ***	-0.158	(0.091)
Economic inequality	-0.619	(0.283) *	-0.450	(0.266)	0.957	(0.805)
<i>Individual-level controls</i>						
Gender (REF: female)	0.001	(0.025)	-0.014	(0.025)	-0.149	(0.078)
Age	0.063	(0.020) **	0.076	(0.019) ***	0.043	(0.063)
Education	0.018	(0.005) ***	0.015	(0.005) **	0.214	(0.014) ***
Household income	0.053	(0.015) ***	0.036	(0.014) *	0.106	(0.045) *
Labour market position						
(REF: employed)						
- Unemployed	-0.060	(0.075)	-0.017	(0.073)	-0.495	(0.221) *
- Non-employed	0.022	(0.070)	0.019	(0.068)	0.190	(0.198)
Household composition						
(REF: single, no kids)						
- Single, no kids at home	-0.083	(0.156)	-0.019	(0.152)	0.168	(0.448)
- Single, kids at home	-0.142	(0.120)	-0.142	(0.118)	0.456	(0.336)
- Couple, no kids	0.000	(0.067)	0.018	(0.065)	-0.085	(0.189)
- Couple, no kids at home	0.129	(0.170)	0.126	(0.164)	0.352	(0.496)
- Couple, kids at home	0.047	(0.080)	0.007	(0.079)	0.249	(0.221)
Church attendance	0.031	(0.009) ***	0.025	(0.009) **	0.075	(0.027) ***
					0.048	(0.023) *

Time-varying*Neighbourhood-level controls*

Ethnic segregation	0.146	(0.342)	0.172	(0.339)	0.057	(0.863)	-0.230	(0.850)
Economic deprivation	0.148	(0.236)	0.180	(0.234)	0.041	(0.606)	-0.035	(0.594)
Economic inequality	0.173	(0.374)	0.187	(0.371)	-0.711	(0.943)	-0.475	(0.931)

Individual-level controls

Household income	-0.020	(0.021)	-0.017	(0.021)	0.120	(0.049) *	0.091	(0.049)
Labour market position (REF: employed)								
- Unemployed	0.017	(0.069)	0.019	(0.069)	0.081	(0.190)	0.095	(0.185)
- Non-employed	-0.001	(0.055)	-0.014	(0.055)	0.270	(0.147)	0.051	(0.142)
Household composition (REF: single, no kids)								
- Single, no kids at home	0.139	(0.124)	0.108	(0.122)	-0.781	(0.324) *	-0.754	(0.313) *
- Single, kids at home	0.173	(0.106)	0.123	(0.105)	-0.725	(0.277) **	-0.588	(0.269) *
- Couple, no kids	0.028	(0.060)	0.036	(0.059)	-0.164	(0.155)	-0.153	(0.150)
- Couple, no kids at home	-0.066	(0.125)	-0.094	(0.124)	-0.735	(0.325) *	-0.749	(0.316) *
- Couple, kids at home	0.121	(0.075)	0.104	(0.074)	-0.288	(0.196)	-0.239	(0.190)
Church attendance	0.004	(0.024)	0.000	(0.024)	0.067	(0.058)	0.055	(0.058)

Sources: *NELLS wave 1 and 2 and Statistics Netherlands (2009; 2013)*

Notes: Regression coefficients of control variables in Models 2 in Table 2.2. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (two-tailed test).

$N_{\text{observations}} = 3867$; $N_{\text{individuals}} = 2360$; $N_{\text{neighbourhoods}} = 238$.

Appendix 2. Effects of control variables on contact, threat and anomie among native Dutch

	Contact neighbours			Group threat			Anomie (Srole)			Anomie (Anxiety)			Anomie (Insecurity)		
<i>Time-invariant</i>															
(Intercept)	5.280	(0.309)	***	18.683	(0.547)	***	13.946	(0.421)	***	1.346	(0.080)	***	1.904	(0.110)	***
Wave (REF: wave 1)	-0.145	(0.119)		0.063	(0.177)		-0.161	(0.190)		-0.049	(0.035)		0.003	(0.043)	
<i>Neighbourhood-level controls</i>															
Ethnic segregation	0.416	(0.355)		1.272	(0.687)		0.097	(0.427)		-0.003	(0.082)		-0.059	(0.123)	
Economic deprivation	-0.090	(0.077)		-0.065	(0.148)		0.173	(0.093)		0.004	(0.018)		0.027	(0.026)	
Economic inequality	-1.511	(0.681)	*	-0.985	(1.318)		0.472	(0.820)		0.016	(0.158)		0.264	(0.235)	
<i>Individual-level controls</i>															
Gender (REF: female)	0.055	(0.065)		0.568	(0.113)	***	-0.187	(0.084)	*	-0.080	(0.016)	***	0.115	(0.023)	***
Age	-0.046	(0.051)		-0.346	(0.092)	***	0.227	(0.067)	***	-0.003	(0.013)		0.045	(0.018)	*
Education	-0.071	(0.012)	***	-0.230	(0.021)	***	-0.193	(0.015)	***	0.000	(0.003)		-0.018	(0.004)	***
Household income	0.045	(0.038)		0.018	(0.068)		-0.284	(0.051)	***	-0.025	(0.010)	**	-0.026	(0.014)	
Labour market position (REF: employed)															
- Unemployed	-0.148	(0.200)		0.215	(0.307)		0.790	(0.274)	**	0.050	(0.055)		0.014	(0.071)	
- Non-employed	0.073	(0.173)		-0.190	(0.295)		0.468	(0.249)		0.042	(0.045)		0.115	(0.063)	
Household composition (REF: single, no kids)															
- Single, no kids at home	0.021	(0.397)		-0.045	(0.643)		0.991	(0.552)		0.001	(0.103)		0.119	(0.141)	
- Single, kids at home	-0.093	(0.300)		0.173	(0.483)		-1.050	(0.431)	*	-0.106	(0.080)		0.160	(0.108)	
- Couple, no kids	0.016	(0.167)		-0.076	(0.273)		0.017	(0.237)		0.044	(0.044)		0.034	(0.060)	
- Couple, no kids at home	0.041	(0.427)		0.927	(0.716)		-0.990	(0.585)		0.107	(0.111)		0.232	(0.154)	
- Couple, kids at home	0.423	(0.200)	*	-0.157	(0.317)		-0.558	(0.292)		0.045	(0.054)		0.030	(0.073)	
Church attendance	0.047	(0.023)	*	-0.027	(0.041)		-0.026	(0.028)		-0.005	(0.005)		-0.030	(0.008)	***

Time-varying

Neighbourhood-level controls											
Ethnic segregation	-0.288	(0.830)	-1.278	(1.206)	-2.464	(1.343)	-0.098	(0.244)	0.114	(0.302)	
Economic deprivation	0.080	(0.575)	1.055	(0.852)	0.761	(0.923)	-0.313	(0.169)	0.104	(0.210)	
Economic inequality	-0.397	(0.908)	1.466	(1.324)	0.494	(1.471)	-0.038	(0.268)	0.129	(0.332)	
Individual-level controls											
Household income	-0.049	(0.050)	-0.131	(0.071)	-0.167	(0.086)	-0.024	(0.015)	-0.032	(0.017)	
Labour market position (REF: employed)											
- Unemployed	0.138	(0.191)	-0.300	(0.267)	-0.053	(0.281)	0.083	(0.062)	0.048	(0.071)	
- Non-employed	-0.164	(0.136)	-0.537	(0.198)	-1.168	(0.228)	***	-0.043	(0.040)	-0.154	(0.053) **
Household composition (REF: single, no kids)											
- Single, no kids at home	0.344	(0.304)	-0.298	(0.453)	0.366	(0.468)	0.102	(0.086)	-0.160	(0.111)	
- Single, kids at home	0.616	(0.260)	* 0.409	(0.388)	0.972	(0.400)	*	0.105	(0.074)	-0.223	(0.095) *
- Couple, no kids	-0.188	(0.147)	0.232	(0.218)	0.295	(0.226)	-0.049	(0.041)	-0.058	(0.053)	
- Couple, no kids at home	0.430	(0.307)	-0.474	(0.456)	0.836	(0.471)	0.014	(0.087)	-0.223	(0.111) *	
- Couple, kids at home	0.170	(0.185)	0.468	(0.274)	0.530	(0.283)	-0.105	(0.052)	* -0.061	(0.067)	
Church attendance	0.099	(0.057)	-0.114	(0.082)	0.052	(0.097)	-0.012	(0.017)	-0.014	(0.021)	

Sources: *NELLS wave 1 and 2 and Statistics Netherlands (2009; 2013)*Notes: Regression coefficients of control variables in Models in Table 2.3. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ (two-tailed test). $N_{\text{observations}} = 3867$; $N_{\text{individuals}} = 2360$; $N_{\text{neighbourhoods}} = 238$.

Appendix 3. Multinomial fixed effects models (neighbourhood + adjacent neighbourhoods)

	Constrained to equality	Right-wing vs PVV	Anti- establishment vs PVV	Demobilized vs PVV	Other parties vs PVV
Model 1					
Wave 2	-1.144***	-0.962***	-2.117***a	-0.966***	-0.916***
(Ref: wave 1)	(0.067)	(0.084)	(0.096)	(0.075)	(0.076)
Total exposure to asylum	-0.001	-0.005	-0.008	0.007	-0.014
Seekers	(0.012)	(0.015)	(0.015)	(0.013)	(0.013)
Log likelihood	-2739			-2569	
Model 2					
Wave 2	-1.131***	-0.946***	-2.097***	-0.959***	-0.914***
(Ref: wave 1)	(0.070)	(0.088)	(0.099)	(0.078)	(0.079)
Exposure to asylum seekers	-0.008	-0.006	0.001	-0.001	-0.027
in regular ASC	(0.028)	(0.038)	(0.034)	(0.033)	(0.033)
Exposure to asylum seekers	0.004	-0.001	-0.008	0.010	-0.010
in temporary ASC	(0.014)	(0.018)	(0.018)	(0.014)	(0.015)
Exposure to asylum seekers	-0.016	-0.022	-0.039	-0.000	-0.014
in crisis ASC	(0.027)	(0.033)	(0.040)	(0.031)	(0.031)
Log likelihood	-2738			-2568	

Sources: 1VOP (2015), COA (2015)

Notes: 8466 observations for 4233 individuals. Coefficients with standard errors in parentheses. + p<0.10; * p<0.05; ** p<0.01; *** p<0.01 (two-tailed test). ^a Estimate differs significantly from the estimates of the other outcome variables.

Appendix 4. Multinomial fixed effects models (municipalities)

	Constrained to equality	Right-wing vs PVV	Anti- establishment vs PVV	Demobilized vs PVV	Other parties vs PVV
Model 1					
Wave 2	-1.105*** (0.071)	-0.938*** (0.087)	-2.071*** ^a (0.097)	-0.895*** (0.079)	-0.881*** (0.079)
(Ref: wave 1)					
Total exposure to asylum	-0.023 (0.020)	-0.019 (0.021)	-0.034 (0.021)	-0.030 (0.020)	-0.034 + (0.020)
Seekers					
Log likelihood	-2738			-2569	
Model 2					
Wave 2	-1.096*** (0.074)	-0.930*** (0.091)	-2.075*** (0.103)	-0.884*** (0.082)	-0.878*** (0.083)
(Ref: wave 1)					
Exposure to asylum seekers	0.005 (0.032)	0.015 (0.041)	0.005 (0.041)	-0.011 (0.036)	-0.006 (0.036)
in regular ASC					
Exposure to asylum seekers	-0.081 + (0.045)	-0.073 (0.046)	-0.089 + (0.046)	-0.082 + (0.046)	-0.086 + (0.045)
in temporary ASC					
Exposure to asylum seekers	-0.014 (0.030)	-0.013 (0.036)	-0.018 (0.043)	-0.025 (0.033)	-0.020 (0.035)
in crisis ASC					
Log likelihood	-2736			-2567	

Sources: 1VOP (2015), COA (2015).

Notes: 8466 observations for 4233 individuals. Coefficients with standard errors in parentheses. + p<0.10; * p<0.05; ** p<0.01; *** p<0.01 (two-tailed test). ^a Estimate differs significantly from the estimates of the other outcome variables.

Appendix 5. Hybrid models (neighbourhoods)

	Constrained to equality	Right-wing vs PVV	Anti- establishment vs PVV	Demobilized vs PVV	Other parties vs PVV
<i>Time-varying:</i>					
Wave 2	-0.334***	-0.312***	-0.557***	-0.251***	-0.280***
(Ref: wave 1)	(0.021)	(0.023)	(0.027)	(0.029)	(0.024)
Exposure to asylum seekers in regular ASC	-0.002	-0.001	-0.001	-0.003	-0.004+
	(0.002)	(0.002)	(0.004)	(0.002)	(0.002)
Exposure to asylum seekers in temporary ASC	-0.001	-0.002	-0.001	0.001	-0.001
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)
Exposure to asylum seekers in crisis ASC	-0.005	-0.007+	-0.004	-0.002	-0.005+
	(0.003)	(0.004)	(0.006)	(0.004)	(0.003)
Threat	-0.114***	-0.103***	-0.119***	-0.093***	-0.136***
	(0.019)	(0.021)	(0.022)	(0.026)	(0.021)
Contact non-western	-0.018+	-0.005	-0.021+	-0.034**	-0.017
	(0.010)	(0.010)	(0.012)	(0.013)	(0.011)
<i>Time-constant:</i>					
Exposure to asylum seekers in regular ASC	-0.000	-0.001	-0.001	0.001	-0.002
	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
Exposure to asylum seekers in temporary ASC	-0.002	-0.002	0.001	-0.000	-0.004
	(0.003)	(0.004)	(0.005)	(0.004)	(0.004)
Exposure to asylum seekers in crisis ASC	-0.007	-0.010	-0.010	-0.005	-0.006
	(0.007)	(0.008)	(0.010)	(0.008)	(0.008)
Threat	-1.416***	-1.171***	-1.555***	-1.213***	-1.724***
	(0.023)	(0.026)	(0.029)	(0.027)	(0.027)
Contact non-western	0.056***	-0.004	0.158***	0.019	0.089***
	(0.011)	(0.013)	(0.015)	(0.014)	(0.013)
Proportion non-western Minorities	1.658***	0.537	1.445***	1.836***	2.537***
	(0.294)	(0.371)	(0.379)	(0.352)	(0.342)
Economic deprivation	-0.000	-0.002***	0.002***	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Gender (REF: female)	-0.235***	0.087	-0.317***	-0.540***	-0.227***
	(0.050)	(0.060)	(0.061)	(0.057)	(0.056)
Age	0.074***	0.112***	-0.028***	0.046***	0.111***
	(0.007)	(0.008)	(0.009)	(0.008)	(0.008)
Education	0.013***	0.024***	0.004	0.005*	0.013***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)

Appendix 5. Continued

	Constrained to equality	Right-wing vs PVV	Anti- establishment vs PVV	Demobilized vs PVV	Other parties vs PVV
Constant	3.901*** (0.086)	3.302*** (0.096)	3.648*** (0.099)	3.461*** (0.096)	4.758*** (0.093)
Log likelihood	-55540	-51189			

Sources: 1VOP (2015), COA (2015), and Statistics Netherlands (2014).

Notes: 38,200 observations for 19,100 individuals. Coefficients with standard errors in parentheses. + p<0.10; * p<0.05; ** p<0.01;

*** p<0.01 (two-tailed test). The continuous neighbourhood-level and individual-level control variables are grand mean centred.

Appendix 6. Fit measures for the MSE-models

	Model 1	Model 2	Model 3	Model 4	Model 5
RMSEA	0.024	0.024	0.029	0.039	0.038
SRMR (within)	0.012	0.012	0.020	0.028	0.032
SRMR (between)	0.082	0.083	0.125	0.129	0.150
CFI	0.982	0.981	0.966	0.94	0.928
TLI	0.976	0.971	0.952	0.916	0.895

Sources: ASFS (2012-2013); US Census Bureau (2010).

N_{individual} = 2,882; N_{neighbourhood} = 1,062.

Appendix 7. Measurement part of the MSE-models (unstandardized)

	Model 1			Model 5		
	B	Se	Sig	B	Se	Sig
<i>Between</i>						
cohesion.by trust	1	(0)	***	1	(0)	***
cohesion.by samevalues	0.584	(0.117)	***	0.626	(0.414)	***
cohesion.by closeknit	0.959	(0.136)	***	0.880	(0.497)	***
cohesion.by informhelp	0.886	(0.114)	***	0.838	(0.413)	***
cohesion.by getalong	0.347	(0.082)	***	0.380	(0.283)	***
ecodepr.by rundown				1	(0)	***
ecodepr.by vacant				0.791	(0.083)	***
ecodepr.by litter				1.060	(0.390)	***
crime.by safecrime				1	(0)	***
crime.by safeday				0.304	(0.083)	***
crime.by safenight				0.781	(0.124)	***
<i>Within</i>						
cohesion.by trust	1	(0)	***	1	(0)	***
cohesion.by samevalues	1.091	(0.037)	***	1.065	(0.046)	***
cohesion.by closeknit	1.108	(0.039)	***	1.099	(0.055)	***
cohesion.by informhelp	1.043	(0.031)	***	1.017	(0.047)	***
cohesion.by getalong	0.759	(0.026)	***	0.768	(0.027)	***
ecodepr.by rundown				1	(0)	***
ecodepr.by vacant				0.763	(0.037)	***
ecodepr.by litter				0.517	(0.034)	***
crime.by safecrime				1	(0)	***
crime.by safeday				0.820	(0.098)	***
crime.by safenight				1.401	(0.160)	***

Sources: ASFS (2012-2013); US Census Bureau (2010).

Notes: Regression coefficients with standard errors between parentheses. * $p < 0.10$;

** $p < 0.05$; *** $p < 0.01$ (two-tailed test). $N_{\text{individual}} = 2,882$; $N_{\text{neighbourhood}} = 1,062$.

Appendix 8. Effects of controls on neighbourhood cohesion from the MSEM models

	M1			M2			M3			M4			M5		
	B	Se	Sig	B	Se	Sig	B	Se	Sig	B	Se	Sig	B	Se	Sig
Between-level															
Population size	-0.093	(0.028)	***	-0.084	(0.029)	***	-0.124	(0.040)	***	-0.071	(0.034)	**	-0.053	(0.172)	
Within-level															
Age	0.004	(0.001)	***	0.003	(0.001)	**	0.003	(0.001)	**	0.004	(0.001)	***	0.003	(0.001)	**
Gender (Ref: female)	0.019	(0.031)		0.031	(0.030)		-0.003	(0.030)		-0.029	(0.028)		-0.028	(0.028)	
Income	0.006	(0.003)	*	0.004	(0.003)		0.003	(0.003)		0.000	(0.003)		-0.002	(0.003)	
Education (Ref: < high school)															
Education (high school)	0.027	(0.088)		0.019	(0.085)		0.063	(0.083)		-0.063	(0.079)		-0.045	(0.081)	
Education (some college)	0.078	(0.085)		0.068	(0.081)		0.070	(0.079)		-0.083	(0.076)		-0.077	(0.075)	
Education (college graduate)	0.057	(0.087)		0.044	(0.083)		0.052	(0.080)		-0.123	(0.077)		-0.114	(0.076)	
Labor market (Ref: employed)															
Labor market (unemployed)	-0.164	(0.053)	***	-0.154	(0.051)	***	-0.158	(0.050)	**	-0.091	(0.047)	*	-0.091	(0.046)	**
Labor market (retired)	-0.018	(0.042)		-0.021	(0.039)		-0.035	(0.040)		0.009	(0.037)		-0.004	(0.036)	
Labor market (other)	-0.054	(0.054)		-0.042	(0.053)		-0.046	(0.052)		-0.004	(0.047)		0.000	(0.045)	
Spouse? (Ref: no spouse)	0.064	(0.036)	*	0.045	(0.035)		0.068	(0.035)	*	0.064	(0.036)	*	0.051	(0.033)	
Child? (Ref: no child)	0.135	(0.037)	***	0.133	(0.036)	***	0.125	(0.037)	***	0.135	(0.037)	***	0.102	(0.035)	***
Church attendance	0.045	(0.007)	***	0.046	(0.006)	***	0.043	(0.007)	***	0.045	(0.007)	***	0.043	(0.006)	***
Sample (Ref: SoCal)															
Sample (Los Angeles region)	-0.057	(0.083)		-0.056	(0.085)		-0.083	(0.084)		-0.057	(0.083)		0.025	(0.167)	
Sample (western US)	0.086	(0.037)	**	0.062	(0.037)	*	0.082	(0.037)	*	0.086	(0.037)	**	0.068	(0.062)	

Sources: ASFS (2012-2013); US Census Bureau (2010).

Notes: Regression coefficients with standard errors between parentheses. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed test). $N_{\text{individual}} = 2,882$; $N_{\text{neighbourhood}} = 1,062$.

Appendix 9. Results from the MSE-models: two latent variables for social cohesion

	Model 1					
	Neighbourhood cohesive norms			Attitudes towards neighbourhood cohesive behaviour		
	B	Se	Sig	B	Se	Sig
<i>Between-level</i>						
% In-group	0.409	(0.106)	***	0.387	(0.103)	***
Eco. deprivation	-0.015	(0.005)	***	0.004	(0.005)	
Crime rate	-0.021	(0.007)	***	-0.022	(0.007)	***
Variance (within)	0.480	(0.032)	***	0.593	(0.034)	***
Variance (between)	0.006	(0.018)		0.010	(0.020)	

Sources: ASFS (2012-2013); US Census Bureau (2010).

Notes: Regression coefficients with standard errors* p<0.10; ** p<0.05; *** p<0.01 (two-tailed test).

N_{individual} = 2,882; N_{neighbourhood} = 1,062. Results for control variables are available upon request.

Appendix 10. Effects of controls on Perceived neighbourhood composition from the MSEM models

	M2			M3		
	Perceived % in-group			Perceived eco. deprivation		
	B	Se	Sig	B	Se	Sig
<i>Between-level</i>						
Population size	-0.007	(0.008)		-0.071	(0.025)	***
<i>Within-level</i>						
Age	0.002	(0.000)	***	-0.001	(0.002)	
Gender (Ref: female)	-0.021	(0.009)	**	-0.072	(0.028)	***
Income	0.003	(0.001)	***	-0.009	(0.003)	***
Education (Ref: < high school)						
Education (high school)	0.026	(0.031)		0.103	(0.077)	
Education (some college)	0.029	(0.030)		-0.026	(0.071)	
Education (college graduate)	0.035	(0.029)		-0.006	(0.071)	
Labor market (Ref: employed)						
Labor market (unemployed)	-0.017	(0.019)		0.014	(0.051)	
Labor market (retired)	0.005	(0.014)		-0.053	(0.039)	
Labor market (other)	-0.021	(0.017)		0.022	(0.051)	
Spouse? (Ref: no spouse)	0.033	(0.013)	***	0.016	(0.037)	
Child? (Ref: no child)	0.002	(0.011)		-0.036	(0.039)	
Church attendance	-0.002	(0.002)		-0.006	(0.006)	
Sample (Ref: SoCal)						
Sample (Los Angeles region)	-0.031	(0.034)		-0.106	(0.089)	
Sample (western US)	0.038	(0.015)	***	0.033	(0.044)	

Sources: ASFS (2012-2013); US Census Bureau (2010).

Notes: Regression coefficients with standard errors between parentheses. * $p < 0.10$; ** $p < 0.05$;

*** $p < 0.01$ (two-tailed test). $N_{\text{individual}} = 2,882$; $N_{\text{neighbourhood}} = 1,062$.

M4						M5					
Perceived safety from crime			Perceived % in-group			Perceived eco. deprivation			Perceived safety from crime		
B	Se	Sig	B	Se	Sig	B	Se	Sig	B	Se	Sig
0.036	(0.032)		-0.008	(0.009)		-0.06	(0.028)	**	0.039	(0.035)	***
-0.001	(0.001)		0.002	(0.000)	***	-0.001	(0.002)		-0.001	(0.001)	
-0.059	(0.024)	**	-0.021	(0.012)	*	-0.07	(0.028)	**	-0.061	(0.024)	**
-0.009	(0.002)	***	0.003	(0.001)	***	-0.009	(0.003)	***	-0.009	(0.003)	***
-0.066	(0.076)		0.024	(0.052)		0.113	(0.077)		-0.074	(0.079)	
-0.170	(0.072)	**	0.027	(0.052)		-0.018	(0.071)		-0.179	(0.076)	**
-0.190	(0.074)	***	0.033	(0.052)		0.002	(0.071)		-0.199	(0.078)	***
0.120	(0.048)	**	-0.017	(0.021)		0.019	(0.050)		0.119	(0.049)	**
0.051	(0.033)		0.005	(0.015)		-0.051	(0.038)		0.05	(0.033)	
0.086	(0.043)	**	-0.021	(0.018)		0.023	(0.051)		0.087	(0.044)	**
-0.002	(0.030)		0.033	(0.013)	**	0.014	(0.037)		-0.002	(0.031)	
-0.030	(0.030)		0.001	(0.015)		-0.033	(0.038)		-0.031	(0.031)	
-0.002	(0.005)		-0.002	(0.002)		-0.005	(0.006)		-0.002	(0.006)	
0.124	(0.077)		-0.023	(0.034)		-0.129	(0.086)		0.122	(0.079)	
0.011	(0.040)		0.037	(0.020)	*	0.019	(0.046)		0.017	(0.047)	

Appendix 11. Spatial error models explaining trust in neighbours – neighbourhood control variables

Egohoods												
		Grid cell	250	500	750	1500	2250	3000	4000	5000	7500	10000
Ethnic Segregation	B		0,350	0,508	0,865	1,283	1,316	1,368	1,210	0,980	1,007	2,215
	SE		0,200	0,256	0,288	0,368	0,431	0,516	0,572	0,635	0,888	1,084
Economic Deprivation	B		-0,144	-0,158	-0,173	-0,190	-0,241	-0,292	-0,260	-0,239	-0,177	-0,223
	SE		0,023	0,032	0,038	0,041	0,050	0,060	0,077	0,083	0,103	0,114
Economic inequality	B		-0,173	-0,661	-0,672	-0,829	-0,678	-0,271	-1,223	-1,460	-3,026	-2,513
	SE		0,398	0,430	0,441	0,516	0,594	0,693	0,802	0,902	1,167	1,249
Egohoods restricted by administrative district boundaries												
Ethnic Segregation	B		250	500	750	1500	2250	3000	4000	5000	7500	10000
			0,345	0,473	0,666	0,947	0,831	0,874	0,837	0,838	0,841	0,776
Economic Deprivation	B		0,188	0,233	0,255	0,314	0,327	0,335	0,339	0,330	0,338	0,333
	SE		-0,152	-0,159	-0,168	-0,182	-0,184	-0,200	-0,194	-0,192	-0,185	-0,186
Economic inequality	B		0,031	0,037	0,039	0,045	0,048	0,049	0,052	0,052	0,054	0,053
	SE		-0,177	-0,473	-0,466	-0,485	-0,454	-0,525	-0,464	-0,436	-0,459	-0,447
	SE		0,398	0,427	0,428	0,446	0,449	0,442	0,444	0,441	0,441	0,437

Sources: *NELLS wave 1 and Statistics Netherlands (2011)*

Notes: bold coefficients are significant at $p < 0.05$ (two-tailed test). The individual-level control variables are included in the presented models. $N = 2313$.

Appendix 12. Spatial error models explaining generalized trust – neighbourhood control variables

		Egohoods									
		<i>Grid cell</i>									
		250	500	750	1500	2250	3000	4000	5000	7500	10000
Ethnic Segregation	B	-0,273	-0,419	-0,292	-0,641	-0,888	-1,288	-1,504	-1,942	-2,478	-2,443
	SE	0,199	0,270	0,314	0,380	0,427	0,477	0,505	0,566	0,795	1,008
Economic Deprivation	B	-0,091	-0,103	-0,145	-0,166	-0,174	-0,170	-0,179	-0,185	-0,125	-0,047
	SE	0,024	0,032	0,040	0,052	0,059	0,063	0,067	0,073	0,091	0,104
Economic inequality	B	0,046	-0,324	-0,214	-0,142	-0,473	-0,650	-0,488	-0,667	-1,292	-0,830
	SE	0,400	0,452	0,479	0,532	0,592	0,654	0,736	0,833	1,069	1,189
AIC		6350	6357	6360	6359	6360	6357	6355	6351	6354	6360
Egohoods restricted by administrative district boundaries											
		250	500	750	1500	2250	3000	4000	5000	7500	10000
Ethnic Segregation	B	-0,190	-0,292	-0,270	-0,525	-0,479	-0,588	-0,540	-0,505	-0,486	-0,482
	SE	0,187	0,245	0,275	0,326	0,337	0,345	0,347	0,344	0,352	0,354
Economic Deprivation	B	-0,108	-0,134	-0,143	-0,173	-0,180	-0,179	-0,184	-0,186	-0,194	-0,204
	SE	0,031	0,039	0,043	0,047	0,049	0,051	0,053	0,055	0,058	0,059
Economic inequality	B	-0,186	-0,643	-0,835	-0,870	-1,028	-0,833	-0,721	-0,610	-0,574	-0,605
	SE	0,400	0,448	0,464	0,462	0,462	0,455	0,455	0,456	0,455	0,454
AIC		6353	6356	6357	6353	6352	6353	6353	6353	6352	6352

Sources: *NELLS wave 1 and Statistics Netherlands (2011)*Notes: bold coefficients are significant at $p < 0.05$ (two-tailed test). The individual-level control variables are included in the presented models. $N = 2313$.

Appendix 13. Spatial error models explaining trust – individual control variables

		Egohood (2250 metres radius)	
		Trust in neighbours	Generalized trust
Intercept	B	-1.571	-1.080
	SE	0.238	0.241
Gender (REF: female)	B	-0.004	-0.045
	SE	0.040	0.040
Age	B	0.012	0.000
	SE	0.003	0.003
Education	B	0.025	0.083
	SE	0.007	0.007
Education missing (REF: non-missing)	B	-0.237	-0.039
	SE	0.153	0.156
Income	B	0.0001	0.0001
	SE	0.000	0.000
Income missing (REF: non-missing)	B	-0.015	-0.266
	SE	0.067	0.068
Church attendance	B	0.007	0.044
	SE	0.014	0.014
Labour market position (REF: Employed)			
- Unemployed	B	-0.028	-0.236
	SE	0.084	0.085
- Non-employed	B	0.223	0.259
	SE	0.089	0.091
- Missing	B	0.033	-0.086
	SE	0.147	0.149
Household composition (REF: Single, no kids)			
- Single. no kids at home	B	0.170	-0.383
	SE	0.180	0.183
- Single. kids at home	B	0.040	-0.294
	SE	0.114	0.116
- Couple. no kids	B	0.017	-0.186
	SE	0.071	0.072
- Couple. no kids at home	B	-0.214	-0.477
	SE	0.213	0.216
- Couple. kids at home	B	0.196	-0.080
	SE	0.069	0.070

Sources: NELLS wave 1 and Statistics Netherlands (2011)

Notes: bold coefficients are significant at $p < 0.05$ (two-tailed test). N = 2313.

Appendix 14. Multilevel models explaining trust

		Neighbourhood		District		Municipality	
		Trust in neighbours	Generalized trust	Trust in neighbours	Generalized trust	Trust in neighbours	Generalized trust
Ethnic Diversity	B	-1,835	-0,633	-1,717	-0,269	-1,855	0,170
	SE	0,23	0,244	0,284	0,285	0,557	0,663
Neighbourhood-level control variables							
Ethnic Segregation	B	0,678	-0,138	0,969	-0,082	0,472	0,473
	SE	0,147	0,156	0,228	0,229	0,383	0,471
Economic Deprivation	B	0,173	0,094	0,225	0,168	0,208	0,225
	SE	0,037	0,039	0,055	0,055	0,084	0,103
Economic inequality	B	-0,600	-0,725	-0,732	-0,629	-1,844	-0,023
	SE	0,421	0,443	0,460	0,463	1,111	1,313
AIC		6291	6435	6310	6437	6340	6428

Sources: *NELLS wave 1 and Statistics Netherlands (2009)*

Notes: bold coefficients are significant at p<0.05 (two-tailed test). The individual-level control variables are included in the presented models. N = 2313 (in 235 neighbourhoods).





SUMMARY IN DUTCH

Inleiding

Binnen een halve eeuw heeft Nederland zich ontwikkeld van een mono-etnische naar een multi-etnische samenleving die continue verandert en diversifieert met de geboorte van tweede (en derde) generatie migranten en de komst van nieuwe immigranten. Tien procent (9.8%) van de Nederlandse bevolking heeft een westerse migratieachtergrond en twaalf procent (12.3%) heeft een niet-westerse migratieachtergrond (CBS, 2016a). De groeiende diversiteit in termen van etniciteit heeft geleid tot een verhit politiek debat in Nederland, alsmede in andere westerse landen, over de mogelijke bedreiging die diversiteit vormt voor sociale cohesie (Wickes, Hipp, Zahnow & Mazerolle, 2013; Coenders, Lubbers, Scheepers & Verkuyten, 2008). Een samenleving met een hoge mate van sociale cohesie, waar mensen elkaar vertrouwen, positief met elkaar omgaan en bereid zijn om bij te dragen aan publieke goederen, wordt als zeer wenselijk beschouwd door politici en beleidsmakers. Burgerparticipatie wordt daarom ook gezien als een van de belangrijkste graadmeters voor de succesvolle integratie van nieuwe migranten (Ministerie van Sociale Zaken en Werkgelegenheid, 2013). Dit is niet zonder reden. Uit onderzoek blijkt immers dat de economie beter functioneert en burgers gezonder en gelukkiger zijn in samenlevingen met een hoge mate van sociale cohesie (Halpern, 2001; Putnam, 2000; Kawachi, 1999; maar zie ook Portes & Vickstrom 2011).

Tegen de achtergrond van de verhoogde bezorgdheid over etnische diversiteit in de politieke arena, zijn sociale wetenschappers de veronderstelde negatieve invloed van diversiteit op cohesie in zowel de Verenigde Staten als in Europa gaan onderzoeken (e.g. Savelkoul, Gesthuizen & Scheepers, 2014; Fieldhouse & Cutts, 2010; Stolle, Soroka and Johnston, 2008; Letki, 2008; Putnam, 2007). Recente meta-analysen van de studies naar de diversiteit-cohesie relatie hebben drie consistente patronen aan het licht gebracht. Het negatieve effect van etnische diversiteit op sociale cohesie wordt vaker gevonden in de Verenigde Staten dan in Europese landen. Het negatieve effect is consistentere als etnische diversiteit in de lokale woonomgeving in plaats van etnische diversiteit in provincies of landen in ogenschouw wordt genomen. Het zijn met name dimensies van sociale cohesie die in ruimtelijke zin gebonden zijn aan diezelfde lokale woonomgeving, zoals vertrouwen in burens en positieve buurt-evaluaties, die hinder ondervinden van etnische diversiteit (Schaeffer, 2014a; Van der Meer & Tolsma, 2014).

Ondanks de in de afgelopen jaren geboekte vooruitgang, zijn er nog altijd belangrijke theoretische en empirische lacunes die gevuld moeten worden. Het doel van deze dissertatie is om de kennis te vergroten over *of*, *waarom* en *waar* etnische diversiteit een negatieve invloed heeft op sociale cohesie. Sociale cohesie wordt in deze dissertatie gedefinieerd als de banden tussen individuen die het gevolg, alsmede de oorzaak, zijn van de kwaliteit van het publieke leven, van gevoelens van toewijding

en vertrouwen, en van participatie in sociale netwerken en burgerorganisaties (Chan, To & Chan, 2006). Etnische diversiteit in de woonomgeving wordt gekarakteriseerd door de relatieve groottes van etnische groepen. *Of, waarom* en *waar* etnische diversiteit de vorming van sociale cohesie hindert wordt in deze dissertatie onderzocht voor de etnische meerderheidspopulatie in Nederland en in de Verenigde Staten in vijf empirische studies.

Aangaande de *of*-vraag, levert deze dissertatie een bijdrage aan de bestaande literatuur door de causale aard van de relatie tussen etnische diversiteit en sociale cohesie te onderzoeken. Het merendeel van de bestaande studies is gebaseerd op cross-sectionele data, wat de bevindingen heeft beperkt tot louter associaties tussen diversiteit en cohesie (zie voor uitzonderingen Laurence & Bentley, 2016; Levels, Scheepers, Huijts & Kraaykamp, 2015; Lancee & Schaeffer, 2015). Op basis van longitudinale data wordt er in deze dissertatie vastgesteld in hoeverre stijgingen in diversiteit ook gerelateerd zijn aan dalingen in sociale cohesie (Studie 1). Daarnaast wordt er een natuurlijk experiment aangewend om de causale aard van de diversiteit-cohesie relatie nog uitvoeriger te onderzoeken. Er wordt onderzocht in hoeverre de plaatsing van asielzoekerscentra en de bijkomende toename in etnische diversiteit in willekeurige buurten in Nederland gerelateerd is aan een afname in sociale cohesie (Studie 2).

Met betrekking tot de *waarom*-vraag, breidt deze dissertatie de bestaande kennis over de diversiteit-cohesie relatie uit door zowel gevestigde als nieuwe theoretische verklaringen voor deze relatie te toetsen. In eerdere studies worden drie verklaringen aangedragen voor het verband tussen etnische diversiteit en sociale cohesie: een gebrek aan contact tussen buurtbewoners, gevoelens van etnische dreiging en anomische gevoelens onder buurtbewoners (Van der Meer & Tolsma, 2014). In deze dissertatie worden deze drie verklaringen voor de diversiteit-cohesie relatie simultaan onderzocht vanuit een longitudinaal perspectief (Studie 1). Daarnaast wordt de waarde getoetst van niet eerder geëxploreerde verklaring voor de invloed van etnische diversiteit op sociale cohesie: individuele percepties van de woonomgeving (Studie 3 en Studie 4).

Aangaande de *waar*-vraag, levert deze dissertatie een bijdrage aan de bestaande literatuur door te bestuderen in welke woonomgeving sociale cohesie het sterkst beïnvloed wordt door etnische diversiteit. Veruit de meeste studies maakten gebruik van administratief gedefinieerde woonomgevingen, zoals postcodegebieden. Deze conventionele keuze is slechts gebaseerd op traditie en op de beschikbaarheid van data (Van der Meer & Tolsma 2014). Er wordt in deze dissertatie daarom empirisch onderzocht in hoeverre de grootte en het type grens van de gekozen woonomgeving de gevonden diversiteit-cohesie relatie beïnvloeden (Studie 2 en Studie 6). Daarnaast wordt er gekeken in hoeverre de etnische compositie van aangrenzende woonomgevingen van invloed is op de mate van etnische diversiteit die bewoners percipiëren in hun eigen woonomgeving (Studie 3).

Studie 1

De eerste empirische studie van dit proefschrift (Hoofdstuk 2) richt zich op de beantwoording van de vragen *of* en *waarom* etnische diversiteit een negatieve invloed heeft op sociale cohesie. Bestaand onderzoek heeft reeds laten zien dat diversiteit in de buurtomgeving negatief gerelateerd is aan cohesie in de buurtgemeenschap. Omdat de meeste studies gebaseerd zijn op cross-sectionele data, kan er echter louter gesproken worden van een samenhang tussen diversiteit en cohesie. Door gebruik te maken van longitudinale data tracht deze studie meer inzicht te verschaffen in de causale aard van de relatie tussen etnische diversiteit en twee attitudinale indicatoren van sociale cohesie: vertrouwen in buren en algemeen sociaal vertrouwen.

Daarnaast beoogt deze studie te onderzoeken waarom diversiteit een negatieve invloed heeft op cohesie. Bestaand onderzoek wijst op drie mogelijke verklaringen voor het negatieve verband tussen diversiteit in de buurtomgeving en cohesie in de buurtgemeenschap, namelijk een gebrek aan contact tussen buurtbewoners, gevoelens van etnische dreiging en anomische gevoelens onder buurtbewoners (Van der Meer & Tolsma, 2014). Deze verklaringen zijn tot op heden slechts in beperkte mate empirisch getoetst. Deze studie draagt bij aan het bestaande onderzoek door de drie genoemde verklaringen simultaan te testen. Dit wordt gedaan op basis van data over Nederlanders zonder migratieachtergrond uit de *Netherlands Longitudinal Life course Study* (2009/2010 en 2013) en op basis van gegevens van het Centraal Bureau voor de Statistiek over etnische diversiteit in Nederlandse wijken (2360 respondenten in 238 wijken).

De resultaten van deze studie laten zien dat meer diversiteit in de buurt niet samenhangt met minder algemeen sociaal vertrouwen, maar wel met minder vertrouwen in buren. Een stijging in etnische diversiteit is daarentegen niet gerelateerd aan een daling in vertrouwen in buren. Dit wijst erop dat een relatief langzame, continue stijging in diversiteit niet schadelijk is voor cohesie. De in cross-sectionele studies gevonden negatieve associatie tussen etnische diversiteit en sociale cohesie lijkt dus niet van causale aard.

Deze studie toont verder aan dat een gebrek aan contact, etnische dreiging en anomie geen verklarende rol spelen in de diversiteit-cohesie relatie. Daarentegen blijkt dat contact met buren alsmede gevoelens van etnische dreiging en anomie wel belangrijke determinanten zijn voor sociale cohesie. Een toename in buurtcontact leidt alleen tot een toename in vertrouwen in buren. Contact met buurtgenoten lijkt bij te dragen aan de constructie van een gedeelde buurtidentiteit, die vertrouwen in insiders – de buurtbewoners – stimuleert, maar tegelijkertijd vertrouwen in outsiders – mensen in het algemeen – voorkomt. Toenames in gevoelens van etnische dreiging en anomie zijn daarentegen met name gerelateerd aan afnames in algemeen sociaal vertrouwen.

Studie 2

De tweede empirische studie van dit proefschrift (Hoofdstuk 3) richt zich op de beantwoording van de vragen *of, waarom en waar* etnische diversiteit een negatieve invloed heeft op sociale cohesie. Er wordt onderzocht in hoeverre steun voor een radicaal-rechtse politieke partij, wat geïnterpreteerd kan worden als een gebrek aan interetnische sociale cohesie, is veranderd ten gevolge van de relatief onverwachte toevloed van asielzoekers tijdens de vluchtelingen crisis in 2015.

Met behulp van een grote, longitudinale dataset van individuele respondenten ($N = 19.100$; *EenVandaag Opinie Panel*), die gekoppeld is aan gedetailleerde gegevens over de plaatsing van asielzoekerscentra van het Centraal Orgaan opvang Asielzoekers, bestudeert deze studie in hoeverre individuen die blootgesteld worden aan vluchtelingen in hun woonomgeving een grotere kans hebben om de PVV te steunen dan individuen die niet blootgesteld worden aan vluchtelingen in hun woonomgeving. Daarnaast wordt er onderzocht of de gevonden relatie tussen de toevloed van vluchtelingen en steun voor deze radicaal rechtse partij verklaard kan worden door gevoelens van etnische dreiging en/of de mate van interetnisch contact. Bovendien wordt er gekeken in hoeverre de relatie anders is in woonomgevingen van verschillende groottes, namelijk in buurten, wijken en gemeenten.

Omdat individuele burgers geen tot weinig invloed hadden op de plaatsing van asielzoekerscentra in hun woonomgeving gedurende het jaar 2015, is de toevloed van en bijkomende blootstelling aan asielzoekers grotendeels exogeen geweest aan het te verklaren fenomeen: steun voor de PVV. Dit maakt dat de onderzoeksopzet van deze studie gezien kan worden als een natuurlijk experiment, waarbij individuen die de interventie – de blootstelling aan asielzoekers – hebben ondergaan vergeleken worden met individuen die de interventie niet hebben ondergaan.

Deze studie bevestigt dat in buurten waarin een toevloed van asielzoekers heeft plaatsgevonden mensen een grotere kans hebben om de PVV te steunen. Een abrupte en onverwachte stijging in etnische diversiteit in de leefomgeving leidt dus wel tot een afname in (interetnische) sociale cohesie. Hoewel gevoelens van etnische dreiging een belangrijke determinant zijn voor het steunen van de PVV, verklaren deze gevoelens niet de gevonden relatie tussen de komst van asielzoekers en steun voor de PVV. De verwachting dat interetnisch contact de positieve invloed van deze specifieke stijging in etnische diversiteit op steun voor de PVV zou verzwakken wordt door deze studie ook niet bevestigd. Tot slot laat deze studie zien dat de positieve relatie tussen de komst van asielzoekers en steun voor de PVV het meest consistent is in de kleinschalige woonomgeving, de administratieve buurt. Echter, ook binnen gemeenten zorgt de aanwezigheid van asielzoekers in tijdelijke asielzoekerscentra voor een stijging in de steun voor de PVV.

Studie 3

In de derde empirische studie van dit proefschrift (Hoofdstuk 4) staat de vraag *waarom* etnische diversiteit negatief gerelateerd is aan sociale cohesie centraal. Er wordt in deze studie een nieuwe verklaring voor het negatieve verband onderzocht: individuele percepties van etnische diversiteit in de buurtomgeving. Deze individuele percepties zouden het verband tussen de daadwerkelijke mate van etnische diversiteit en sociale cohesie kunnen verklaren, omdat de betekenis die individuen toekennen aan etnische diversiteit van belang is voor hoe zij reageren op diversiteit in hun buurtomgeving (Newman, Velez, Hartman & Bankert, 2015; Shinn & Toohey, 2003; Sampson, Morenoff & Gannon-Rowley, 2002). Er is tot op heden weinig onderzoek gedaan naar dit verklarende mechanisme. Door te onderzoeken hoe de individuele percepties van etnische diversiteit tot stand komen, wordt er in deze studie een eerste stap gezet in het testen van dit mechanisme.

Er wordt bestudeerd in hoeverre, naast de daadwerkelijke groepsomvang van niet-westerse en westerse minderheden, andere kenmerken van de woonomgeving – etnische segregatie, economische deprivatie en criminaliteit – van invloed zijn op de totstandkoming van individuele inschattingen van de grootte van de groep etnische minderheden. Omdat woonomgevingen geen eilanden zijn, wordt ook de compositie van aangrenzende woonomgevingen in ogenschouw genomen. Daarnaast wordt er ook onderzocht in hoeverre etnische dreiging en interetnisch contact gerelateerd zijn aan individuele percepties van etnische diversiteit. Er wordt in deze studie gebruik gemaakt van data over Nederlanders zonder migratieachtergrond uit het *EenVandaag Opinie Panel* en gegevens over etnische diversiteit in de lokale woonomgeving van het Centraal Bureau voor de Statistiek (24,538 respondenten in 3,113 buurten).

De resultaten laten zien dat er grote variatie bestaat in individuele inschattingen van het aantal etnische minderheden, zowel tussen woonomgevingen als binnen woonomgevingen. Deze studie toont aan dat Nederlanders zonder migratieachtergrond meer kans hebben om de groep niet-westerse minderheden dan de groep westerse minderheden te overschatten. Het blijkt dat de groep niet-westerse minderheden vooral wordt overschat in economisch gedepriveerde omgevingen, waarin er veel criminaliteit is. Mogelijk kan dit verklaard worden door heersende stereotypen die niet-westerse minderheden in verband brengen met armoede en criminaliteit. Als er in aangrenzende woonomgevingen meer etnische minderheden wonen, dan schatten mensen het aantal minderheden in hun eigen omgeving ook hoger in. Echter, aangezien etnische segregatie, economische deprivatie en criminaliteit in aangrenzende woonomgevingen geen additionele rol spelen in de totstandkoming van individuele percepties van etnische diversiteit, concludeert deze studie dat de invloed van omgevingskenmerken op percepties van deze omgeving bestudeerd dienen te worden binnen de lokale woonomgeving.

Naast kenmerken van de woonomgeving, dragen ook individuele kenmerken bij aan hogere inschattingen van het aantal etnische minderheden in de buurt. Nederlanders zonder migratieachtergrond die regelmatig contact hebben met niet-westerse minderheden hebben een grotere kans de aanwezigheid van minderheden te overschatten. Ook gevoelens van etnische dreiging zijn sterk gerelateerd aan overschattingen van de groepsgrootte van etnische minderheden in de buurt. Deze gevoelens zorgen ervoor dat mensen zich meer bewust zijn van de aanwezigheid van minderheden, waardoor de kans op overschatting ook groter wordt. Omdat deze studie gebaseerd is op cross-sectionele data, kunnen er echter geen causale interpretaties van dit verband gedaan worden.

Studie 4

In de vierde empirische studie van dit proefschrift (Hoofdstuk 5) staat de vraag *waarom* etnische diversiteit negatief gerelateerd is aan sociale cohesie centraal. Er wordt onderzocht in hoeverre individuele percepties van etnische diversiteit, economische deprivatie en de mate van criminaliteit in de woonomgeving het negatieve verband tussen diversiteit en cohesie kunnen verklaren.

Omdat de verklarende kracht van deze individuele percepties van de buurt nog niet eerder getoetst is, is er in deze studie voor gekozen om deze onder de loep te nemen in de zogeheten *most-likely case*. Meta-analysen van het bestaande onderzoek naar de negatieve relatie tussen diversiteit en cohesie hebben laten zien dat de relatie het meest consistent is in de Verenigde Staten, voor mensen uit de etnische meerderheidspopulatie (i.e. *U.S. whites*), en voor indicatoren van sociale cohesie die direct gerelateerd zijn aan de lokale buurtomgeving. In deze studie wordt de verklarende rol van individuele buurtpercepties daarom onderzocht voor de relatie tussen etnische diversiteit en buurtcohesie onder de etnische meerderheidspopulatie in de Verenigde Staten.

Er wordt gebruik gemaakt van individuele data van de *American Social Fabric Study* (2012/2013) en van gegevens over etnische diversiteit van het Amerikaanse Census Bureau. De analyses laten zien dat er meer buurtcohesie is naar mate er minder etnische diversiteit in de buurt is. Ook is er meer buurtcohesie in buurten waarin er weinig criminaliteit is. De associatie tussen etnische diversiteit en buurtcohesie is ongeveer even sterk als de associatie tussen criminaliteit en buurtcohesie. Economische deprivatie is, daarentegen, alleen negatief gerelateerd aan bepaalde dimensies van buurtcohesie, namelijk wel aan normen over cohesie maar niet aan houdingen ten opzichte van cohesie-bevorderend gedrag. Dit is een interessante bevinding, omdat de negatieve relatie tussen economische deprivatie en buurtcohesie in eerder onderzoek zeer consistent werd gevonden.

De studie toont verder aan dat individuele percepties van etnische diversiteit de negatieve relatie tussen de daadwerkelijke mate van diversiteit en buurtcohesie deels

verklaren. Ook individuele percepties van veiligheid in de buurt verklaren een deel van het negatieve verband tussen diversiteit en cohesie. Dit zou mogelijk kunnen komen door heersende stereotypen die etnische minderheden in verband brengen met criminaliteit. Hoewel individuele percepties van de mate van economische deprivatie in de buurt de negatieve relatie tussen diversiteit en cohesie niet verklaren, zijn deze percepties wel een belangrijke determinant voor een gebrek aan cohesie.

Naast de verklarende rol van individuele buurtpercepties, geeft deze studie ook inzicht in de manier waarop deze percepties tot stand komen. Percepties van de etnische diversiteit, economische deprivatie en criminaliteit in de buurt worden niet alleen gevormd door de corresponderende objectieve buurtkenmerken, maar juist ook door andere objectieve buurtkenmerken. Als de mate van etnische diversiteit laag is, dan zijn mensen minder geneigd om economische deprivatie in de buurt te percipiëren. Daarnaast wordt de mate van etnische diversiteit lager ingeschat in buurten waar er minder criminaliteit is.

Studie 5

In de vijfde empirische studie van dit proefschrift (Hoofdstuk 6) wordt onderzocht *waar* etnische diversiteit negatief gerelateerd is aan sociale cohesie. Omdat bestaand onderzoek heeft laten zien dat verschillende kenmerken van de leefomgeving op verschillende niveaus houdingen en gedragingen van individuen kunnen beïnvloeden (Sharkey & Faber, 2014; Logan, Zhang & Xu, 2010), is het van belang om voor de relatie tussen diversiteit en cohesie te onderzoeken binnen welke leefomgeving deze specifieke relatie het sterkst is. Zonder een expliciete theoretische of empirische verantwoording hebben de meeste studies tot op heden etnische diversiteit en de relatie met sociale cohesie bestudeerd in administratief gedefinieerde woon-omgevingen. Deze studie draagt bij aan de bestaande literatuur door uit te zoeken in hoeverre de schaal – gedefinieerd als de grootte van het geografische gebied – en het type buurtgrenzen – administratief gedefinieerd of gedefinieerd door middel van afstand – van invloed zijn op de relatie tussen etnische diversiteit en twee attitudinale indicatoren van sociale cohesie: vertrouwen in burens en algemeen sociaal vertrouwen.

In deze studie wordt etnische diversiteit geobserveerd in zogenoemde ego-buurten in plaats van in administratieve buurteenheden. Deze ego-buurten zijn concentrische cirkels met de individuele respondenten in het middelpunt. Anders dan administratieve buurteenheden, zijn deze ego-buurten van gelijke grootte voor alle respondenten, beslaan ze het gebied direct om de respondenten heen, en kunnen ze gevarieerd worden in grootte van een gebied ter grootte van een paar straten tot een gebied ter grootte van een gehele gemeente. Omdat administratieve buurteenheden in Nederland vaak wel corresponderen met natuurlijke grenzen, zoals grote wegen en rivieren, wordt etnische diversiteit in deze studie ook bestudeerd in ego-buurten waarbij de grenzen worden bepaald door de overlappende administratieve buurten.

Er wordt in deze studie gebruik gemaakt van data over Nederlanders zonder migratie-achtergrond uit de *Netherlands Longitudinal Life course Study* (2009/2010) en van gedetailleerde gegevens van het Centraal Bureau voor de Statistiek over de etnische compositie in elk vierkant van 100 bij 100 meter in Nederland (2313 respondenten).

In overeenstemming met bestaande meta-analysen van het onderzoek naar de relatie tussen diversiteit en cohesie (Schaeffer, 2014a; Van der Meer & Tolsma, 2014), laat deze studie een negatieve associatie zien tussen etnische diversiteit en sociaal vertrouwen, die sterker is voor vertrouwen in buren dan voor algemeen sociaal vertrouwen. Dit betekent echter niet dat het gekozen geografische design niet van invloed is op de gevonden relatie tussen diversiteit en sociaal vertrouwen. Waar het type buurtgrenzen weinig tot geen invloed heeft op de gevonden relatie, heeft de grootte van de woonomgeving wel een substantiële invloed op de gevonden relatie. Alleen als etnische diversiteit bestudeerd wordt in kleine woonomgevingen, met een maximale radius van 250 meter, is diversiteit negatief gerelateerd aan algemeen sociaal vertrouwen. De negatieve associatie tussen etnische diversiteit en vertrouwen in buren wordt daarentegen gevonden in woonomgevingen met een radius variërend van 100 meter tot aan 10.000 meter. Echter, ook voor vertrouwen in buren is de invloed van etnische diversiteit sterker in kleine woonomgevingen dan in grote woonomgevingen.

Omdat de relatie tussen diversiteit en zowel algemeen sociaal vertrouwen als vertrouwen in buren het sterkst is in buurten met een radius van 250 meter (en niet in buurten met een radius van 100 meter), lijkt er ook een grens te zijn aan op hoe kleine schaal men de relatie tussen diversiteit en sociaal vertrouwen dient te bestuderen. Deze studie concludeert daarom dat de meest relevante woonomgeving om de relatie tussen etnische diversiteit en de gebruikte indicatoren van sociale cohesie te onderzoeken een ego-buurt is met een radius tussen de 100 en 250 meter.

Conclusie

Westerse samenlevingen worden meer en meer divers in termen van etnische achtergrond. Dit proces van groeiende diversificatie is ook zichtbaar in Nederland. De trend van de afgelopen vijftig jaar waarbij meer mensen immigrerden naar dan emigreerden uit Nederland zal hoogstwaarschijnlijk de komende decennia doorzetten. Het Centraal Bureau voor de Statistiek voorspelt dat de etnische meerderheidspopulatie zal krimpen van 13.2 miljoen in 2015 naar 12.4 miljoen in 2060, terwijl de etnische minderheidspopulatie zal groeien van 3.7 miljoen in 2015 naar 5.7 miljoen in 2060 (Van Duin & Stoeldraaijer, 2014). De gevolgen van toenemende etnische diversiteit voor sociale cohesie zullen een actueel thema van onderzoek blijven. De relevantie van deze dissertatie moet dan ook gezien worden in deze context. In vijf empirische studies is kennis opgedaan over *of*, *waarom* en *waar* etnische diversiteit negatief gerelateerd is aan sociale cohesie.

Aangaande de *of*-vraag is bestaande kennis uitgebreid door te laten zien dat de associatie tussen diversiteit en sociaal vertrouwen longitudinaal niet gevonden wordt: mensen gaan hun burens niet meer wantrouwen als etnische diversiteit in de woonomgeving stijgt. Een relatief langzame, continue stijging van etnische diversiteit blijkt dus niet zo schadelijk voor sociale cohesie als men zou concluderen op basis van het bestaande cross-sectionele onderzoek. Dit betekent echter niet dat etnische diversiteit helemaal geen negatieve gevolgen voor sociale cohesie heeft. Op de korte termijn hindert diversiteit namelijk wel de vorming van cohesie. Relatief snelle en onverwachte stijgingen in het aantal asielzoekers in de woonomgeving zorgen voor een stijging in steun voor radicaal rechts, oftewel een daling in een formele, interetnische vorm van sociale cohesie, in ieder geval zo lang als gewenning (Savelkoul et al., 2011; Schneider, 2008) of uit-migratie nog niet hebben plaatsgevonden. Een veelbelovende richting voor toekomstig onderzoek zou zijn om te investeren in meer geavanceerde longitudinale analyses gebaseerd op meer dan twee meetmomenten, zodat de kennis over de invloed van de grootte van de verandering in etnische diversiteit en de lengte van de tijdsperiode waarin de verandering plaatsvindt op de gevonden diversiteit-cohesie relatie vergroot kan worden.

Wat betreft de *waarom*-vraag heeft deze dissertatie laten zien dat buurtcontact een belangrijke stimulans is voor vertrouwen in burens, terwijl etnische dreiging en anomie schadelijk zijn voor algemeen sociaal vertrouwen. Etnische dreiging is niet alleen negatief gerelateerd aan attitudinale dimensies maar ook aan gedragsdimensies van sociale cohesie. Hoewel contact, dreiging en anomie dus belangrijke determinanten voor cohesie zijn, kunnen deze factoren de relatie tussen etnische diversiteit en sociale cohesie niet verklaren. Deze dissertatie heeft daarnaast aangetoond dat zowel de gepercipieerde mate van etnische diversiteit als de gepercipieerde mate van criminaliteit de gevonden diversiteit-cohesie relatie wel deels verklaren, althans in de *most-likely case*. Heersende stereotypen die etnische minderheden in verband brengen met criminaliteit kunnen mogelijk verklaren waarom etnisch diverse buurten als onveiliger gepercipieerd worden en waarom sociale cohesie vervolgens lager is in deze diverse buurten. Deze mogelijke verklaring zou in toekomstig onderzoek getoetst kunnen worden door directe metingen van etnische stereotypen op te nemen in het verklaringsmodel.

Aangaande de *waar*-vraag heeft deze dissertatie een bijdrage geleverd aan de bestaande literatuur door te laten zien dat de grootte van de woonomgeving het verband tussen etnische diversiteit en sociale cohesie beïnvloedt. In overeenstemming met de beperkt beschikbare theorie, wordt er geconcludeerd dat de diversiteit-cohesie relatie het sterkst is in kleinschalige woonomgevingen. Een veelbelovende richting voor toekomstig onderzoek is om verder uit te zoeken welk geografisch gebied mensen zien als hun buurt en of dit verschilt voor verschillende groepen inwoners. Als onderzoekers niet weten wat de meest relevante woonomgeving is om bepaalde

buurteffecten te onderzoeken, dan biedt het gebruik van ego-buurtten een flexibele manier om, in ieder geval empirisch, vast te stellen hoe deze omgeving eruit ziet. Anders dan administratief gedefinieerde buurten, zijn ego-buurtten even groot voor elk individu, beslaan ze het gebied direct om de individu heen en kunnen ze eenvoudig in grootte gevarieerd worden.

Hoewel deze dissertatie waardevolle kennis heeft geproduceerd over *of, waarom* en *waar* etnische diversiteit gerelateerd is aan sociale cohesie, zijn er ook een aantal beperkingen die aangestipt dienen te worden. Ten eerste, is er gekozen om de focus te leggen op de etnische meerderheidspopulatie, niet alleen omdat er erkend wordt dat verschillende mechanismen mogelijk een rol spelen in het verklaren van sociale cohesie onder de etnische minderheidspopulatie, maar ook omdat er niet voldoende data beschikbaar was voor de etnische minderheidspopulatie. Omdat een substantieel deel van de inwoners van de bestudeerde gebieden behoren tot de etnische minderheidspopulatie, beperkt deze keuze de generaliseerbaarheid van de conclusies van deze dissertatie. Een vruchtbare richting voor toekomstig onderzoek zou daarom zijn om te bestuderen in hoeverre de getrokken conclusies ook gelden voor de etnische minderheidspopulatie.

Ten tweede, is de steun voor een radicaal rechtse politieke partij gebruikt als indicator voor een gebrek aan sociale cohesie. Omdat de PVV bekend staat om zijn anti-immigratie standpunten en haar campagne om Nederland te 'de-islamiseren', wordt er beargumenteerd dat steun voor deze partij gezien kan worden als een indicatie van de erosie van sociale cohesie tussen de etnische meerderheidspopulatie en de etnische minderheidspopulatie. Er wordt echter erkend dat steun voor de PVV geen perfecte indicator voor een gebrek aan interetnische sociale cohesie is, omdat mensen de PVV ook steunen om andere redenen, zoals haar anti-EU standpunten, en omdat het steunen van een politieke partij – ongeacht haar standpunten – gezien kan worden als een vorm van burgerbetrokkenheid en dus geïnterpreteerd kan worden als een uiting van sociale cohesie (Chan et al., 2006). Dit is een noemenswaardige limitatie van deze dissertatie, omdat het meest consistente bewijs voor een negatieve invloed van etnische diversiteit gevonden wordt voor deze conceptualisatie van sociale cohesie. Toekomstig onderzoek is nodig om te achterhalen in hoeverre een abrupte en relatief onverwachte stijging in etnische diversiteit ook schadelijk is voor andere, meer gevestigde indicatoren van sociale cohesie.

Ten derde, is de rol van individuele percepties van de woonomgevingen in het verklaren van de diversiteit-cohesie relatie slechts cross-sectioneel onderzocht. Hoewel dit een belangrijke eerste stap is in het onderzoeken van een nieuw theoretisch mechanisme, beperkt het gebruik van cross-sectionele data de implicaties van de bevindingen wel. Toekomstig longitudinaal onderzoek, dat beter in staat is om te gaan met selectieve verhuismobiliteit en de mogelijk omgekeerde causaliteit tussen buurtpercepties en sociale cohesie, is nodig om meer inzicht te krijgen in de

verklarende rol van buurtpercepties. Bovendien is er meer onderzoek nodig om te achterhalen hoe deze percepties zich verhouden tot de meer gevestigde theoretische mechanismen in het verklaren van de diversiteit-cohesie relatie. Te meer omdat deze dissertatie heeft laten zien dat mensen die meer interetnisch contact hebben en/of meer gevoelens van etnische dreiging ervaren een grotere kans hebben om de grootte van de etnische minderheidspopulatie te overschatten.

Ondanks de genoemde beperkingen, levert deze dissertatie niet alleen een belangrijke bijdrage aan de wetenschappelijke kennis over de diversiteit-cohesie relatie, maar biedt het ook relevante inzichten voor beleidsmakers. Het is belangrijk dat beleidsmakers de negatieve invloed van etnische diversiteit op sociale cohesie niet overschatten. Waar onverwachte en abrupte stijgingen in etnische diversiteit de sociale cohesie op de korte termijn wel hinderen, zijn langzame, continue stijgingen in etnische diversiteit niet gerelateerd aan dalingen in sociale cohesie. Hoewel beleidsmakers de negatieve gevolgen van onverwachte stijgingen in etnische diversiteit wel serieus moeten nemen, impliceert deze bevinding dat ze vooral niet andere factoren die een substantiëlere rol spelen in de vorming van sociale cohesie uit het oog moeten verliezen. Omdat stijgingen in contact alsmede dalingen in etnische dreiging en anomie sociale cohesie stimuleren, zouden beleidsmakers zich kunnen focussen op projecten die beogen buurtcontact te vergroten en/of etnische dreiging of anomie te verminderen. Gegeven dat deze dissertatie heeft laten zien dat de gepercipieerde etnische diversiteit net zo belangrijk, dan wel belangrijker is in het verklaren van sociale cohesie dan de daadwerkelijke mate van etnische diversiteit, zou het wellicht vruchtbaarder en minder kostbaar zijn om individuele percepties van etnische diversiteit in plaats van de daadwerkelijke etnische diversiteit in de woonomgeving te beïnvloeden.





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ABOUT THE AUTHOR

About the author

Joran Laméris was born in Groningen, the Netherlands, on the 2nd of August 1988. She obtained a Bachelor's degree in Political Science (*cum laude*) in 2010 at the University of Amsterdam. After completing internships at the International Labour Organization (UN) and Movies that Matter (Amnesty International), she continued her studies at the University of Amsterdam and obtained a Research master's degree in Social Sciences (*cum laude*) in 2013. In September that year Joran started as a PhD candidate at the Interuniversity Center for Social Science Theory and Methodology (ICS) and the Department of Sociology at the Radboud University in Nijmegen. Her PhD project was funded through the Research Talent program from the Netherlands Organisation for Scientific Research (NWO) and resulted in this dissertation. From May to July 2015, Joran was a visiting scholar at the department of Criminology, Law and Society at the University of California Irvine (USA). Here she wrote one of the dissertation's chapters under the supervision of prof. dr. John R. Hipp. Besides completing this dissertation, she obtained her University Teaching Qualification (UTQ) and co-authored two published articles on neighbourhood effects.





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As a consequence of ongoing immigration and the birth of second (and third) generation migrants, western countries are becoming increasingly diverse in terms of people's ethnic background. This increasing ethnic diversity has triggered a heated political debate about the possible threats of ethnic diversity for the well-being of society. Against the backdrop of this debate, this book improves the understanding of *whether*, *why* and *where* ethnic diversity affects social cohesion. Knowledge pertaining to these three questions is developed in five empirical chapters. The findings indicate that steady, long-term increases in ethnic diversity do not challenge social cohesion, whereas abrupt, short-term increases in ethnic diversity do – in any case temporarily – inhibit social cohesion. Even though the negative relationship between diversity and cohesion is hardly explained by feelings of ethnic threat and anomie, the results show that threat and anomie are important inhibitors for social cohesion. As individuals' perceptions of neighbourhood diversity and neighbourhood safety do explain the diversity-cohesion relationship, this study suggests that it especially matters what ethnic diversity represents in a given residential environment. Furthermore, the findings of this study reveal that the negative relationship between diversity and cohesion is strongest within small-scale residential environments. People seem to identify more strongly with the small-scale residential context, as a consequence of which they are more aware of and affected by the ethnic composition of this environment.

About the author

Joran Laméris (1988) obtained a Bachelor's degree in Political Science cum laude in 2010 at the University of Amsterdam and a Research master's degree in Social Sciences cum laude in 2013 at the University of Amsterdam. The present study was conducted at the Interuniversity Center for Social Science Theory and Methodology (ICS) in Nijmegen.