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Ethnic, Religious and Economic Diversity in Dutch Neighbourhoods: Explaining Quality of Contact with Neighbours, Trust in the Neighbourhood and Inter-Ethnic Trust

Bram Lancee and Jaap Dronkers

Several studies conclude that ethnic diversity tends to reduce social capital. There may, however, be other forms of diversity that also affect social capital, and their inclusion might make the negative effect of ethnic diversity spurious. Besides ethnic diversity, we identify economic and religious diversity, as well as language proficiency in the neighbourhood. This study explores data from the Netherlands showing how these four dimensions of diversity in the neighbourhood affect the quality of contact with neighbours, trust in the neighbourhood and inter-ethnic trust for immigrant and native residents. We find that ethnic diversity in the neighbourhood still lowers the quality of contact with neighbours. For natives, ethnic diversity is positively associated with inter-ethnic trust, whereas for immigrants there is no effect. Furthermore, for natives, religious diversity negatively affects the quality of contact with neighbours and inter-ethnic trust, whereas for immigrants this effect is positive. Economic diversity positively impacts on trust in the neighbourhood and inter-ethnic trust. We do not find an effect of language proficiency. We conclude that, besides ethnic diversity, other forms of diversity in the neighbourhood do also affect trust. Furthermore, diversity can undermine, but also build, various aspects of trust. Last, diversity in the neighbourhood does not mean the same for immigrant and native residents.

Keywords: Ethnic Diversity; Economic Diversity; Religious Diversity; Trust; Neighbourhoods; The Netherlands

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Introduction

Recently, there has been considerable attention paid to the relation between ethnic diversity and social capital in the neighbourhood. Scholars report that ethnic diversity reduces social cohesion and social capital (Lancee and Dronkers 2010; Leigh 2006; Letki 2008; Putnam 2007; Stolle *et al.* 2008). Putnam, for example, claims that, in the short run, immigration and ethnic diversity tend to reduce solidarity and social capital. He presents evidence from the USA showing that, in ethnically diverse neighbourhoods, residents of all ethnic groups tend to 'hunker down', that is, to pull in like a turtle (2007: 149). However, current studies do not take sufficiently into account other types of diversity in the neighbourhood. If other dimensions are equally important, analyses that do not take them into account are flawed. The main contribution of this paper is to include several relevant forms of diversity in the neighbourhood simultaneously, and analyse their effect on trust in the neighbourhood.

Lancee and Dronkers (2010) confirmed that Putnam's findings are also valid for the Netherlands. At least in the short term there exists a negative relation between ethnic diversity in the neighbourhood on the one hand, and the quality of contact with neighbours and trust in the neighbourhood on the other. However, the Dutch results for trust in other ethnic groups than one's own were different from those of Putnam (2007). Ethnic diversity in the neighbourhood did not negatively affect the level of inter-ethnic trust. In contrast, having ethnically different neighbours increases inter-ethnic trust. Tolsma *et al.* (2009) found the same results with other comparable Dutch data.

The central argument of these studies is, however, that diversity (in whatever aspect) has detrimental effects on trust. Leigh (2006), for example, in his Australian study, found that, for both immigrants and natives, linguistic diversity reduces trust even more than does ethnic diversity. Letki (2008) finds for the UK that, apart from ethnic diversity, a low neighbourhood socio-economic status is the main source of low social capital. Both scholars conclude that, for a good analysis of the impact of ethnic diversity in the neighbourhood, other measures of diversity also need to be taken into account.

Nonetheless, these studies include only one or two measures of diversity. There are no studies that *simultaneously* analyse the impact of these types of diversity in the neighbourhood on social capital. To better understand the importance of ethnic diversity in the neighbourhood, a study that includes multiple measures of diversity is necessary in order to avoid apparently significant effects, which then become spurious after the inclusion of all forms of diversity. This paper introduces four measures of diversity, prompting our main research question: 'To what extent do ethnic, economic, religious and language diversity in the neighbourhood correspond with trust in neighbourhood, inter-ethnic trust and the quality of contact with neighbours, after controlling for other individual, neighbourhood and municipality characteristics?'

Theory and Hypotheses

Social Capital and Trust

There are many different forms or elements of social capital; consequently even more definitions of the concept are being applied. As a result, Putnam (2007: 137) chooses to adopt a 'lean and mean' definition: 'social networks and the associated norms of reciprocity and trustworthiness'. A helpful approach when conceptualising social capital is to distinguish between structural and cognitive social capital (Harell and Stolle 2010; Lancee 2010). The structural component refers to the 'wires' in the network—the frequency and intensity of links that contribute to the exchange of resources—and involves a behavioural component, unlike the cognitive component. This latter refers to the 'nodes' in a network—attitudes and values such as perceptions of support, reciprocity and trust—that contribute to the exchange of resources.

Most of the measures presented by Putnam (2007)—social trust and solidarity—can be characterised as cognitive social capital. However, when analysing social capital in the neighbourhood, the measurement benefits from including a behavioural component as well.

Besides the difference in cognitive and structural components, social capital is a concept that cuts through 'thematic' dimensions. Scholars exploring the relation between diversity and social capital include multiple measures of social capital: having social ties in the neighbourhood (Lancee and Dronkers 2010; Letki 2008), the likelihood that a lost wallet is returned (Letki 2008; Stolle *et al.* 2008), group involvement and trust in one's neighbours (Letki 2008; Putnam 2007), generalised trust (Leigh 2006) and inter-ethnic trust (Lancee and Dronkers 2010; Putnam 2007). For analysis of the impact of ethnic diversity on social capital, the differentiation between inter-ethnic and more general forms of trust is of particular importance. It may be that living in an ethnically diverse neighbourhood affects people's trust towards other ethnic groups differently to social relations between people in general.

We analyse three dependent variables that cover the inter-ethnic and the more general dimensions of trust, as well as the cognitive and structural parts of social capital. We construct three scales: quality of contact with the neighbours, trust in the neighbourhood and inter-ethnic trust. Although we realise that these measures do not cover the entire spectrum of social capital, and may also be causally related themselves, we take these scales as proxies for social trust in the neighbourhood.

Contact and Conflict Theory

Putnam (2007: 141–2) discusses two theories that deal with diversity and social connections. According to *contact theory*, more diversity implies more inter-ethnic tolerance and social solidarity. The reasoning is that 'as we have more contact with

people unlike us, we overcome initial barriers of ignorance and hesitation and come to trust them more'. This line of reasoning stems from *intergroup theory*, which originates from Allport (1979) and is extended by Pettigrew (1998). Intergroup theory states that contact between groups is maximal when five conditions are met: equal status between groups, common goals to be reached, intergroup cooperation, support of laws and customs, and the potential for friendship. The theory predicts prejudice to be minimal when intergroup contact is maximal; many studies also found this result (see Pettigrew 1998).

Conflict theory argues exactly the opposite: diversity fosters out-group distrust and in-group solidarity. In other words, the more we are brought into physical proximity with people who are different, the less we trust the 'other'. Putnam (2007) subsequently introduces *constrict theory*, suggesting that ethnic diversity might reduce both in-group and out-group trust. His (implicit) argumentation is that, when the social context is more diverse in terms of ethnic groups, there are more people 'unlike you'. As a result, there are fewer people with whom one can identify, resulting in fewer social connections and lower levels of trust. That is, ethnic diversity may correlate negatively with all dimensions of social capital (see also Alesina and La Ferrara 2002; Allen and Cars 2001; Letki 2008).

Ethnic Diversity

We follow Putnam (2007) and his 'constrict' hypothesis, but reformulate this general hypothesis by including other dimensions of diversity:

> H1a Ethnic diversity in the neighbourhood negatively affects the quality of contact with neighbours and trust in the neighbourhood, both for immigrant and native residents, irrespective of its economic, religious and language diversity.

With respect to inter-ethnic trust, there may, however, be competing hypotheses. According to the contact argument, we would expect a positive relationship: more exposure to ethnically different people increases trust in people who have a different ethnicity. According to the constrict argument, we would expect a negative relationship: diversity reduces all forms of trust. Putnam (2007) does report a negative relation between ethnic diversity and trust in other races, but does not present multivariate analyses to prove that the correlation is not spurious. Moreover, Lancee and Dronkers (2010) and Tolsma *et al.* (2009) found a positive effect of the ethnic diversity of the neighbourhood on inter-ethnic trust, even in multivariate analysis. We expect that this result will not change by including economic, religious or language diversity. We therefore hypothesise that

> H1b Ethnic diversity in the neighbourhood positively affects inter-ethnic trust, both for immigrant and native residents, irrespective of its economic, religious and language diversity.

Economic Diversity

Several scholars report a relation between economic disadvantage and lower social capital. For example, an economically disadvantaged neighbourhood is a main factor in eroding inter-personal trust (Ross *et al.* 2001) and generalised trust (Alesina and La Ferrara 2002; Marschall and Stolle 2004). Oliver and Mandelberg (2000) show that it is the low-economic-status environment which triggers a negative attitude towards other ethnic groups, rather than the ethnic diversity of the environment. Letki (2008) shows that the socio-economic status of the neighbourhood has a stronger impact on social capital than ethnic diversity.

Economic status in a neighbourhood is not, however, the same as economic diversity. While the former indicates the average economic position of the residents, the latter measures their chances of meeting residents with a different economic position. The same argument may hold for measures of inequality, such as the Gini coefficient. For example, Alesina and La Ferrara (2002) find that more inequality lowers trust. Their argument is that, in communities with high inequality, the share of poor people is higher, and since poor people generally have lower levels of trust, as an equilibrium response to a low-trust environment everybody trusts less.

When a neighbourhood is economically more *diverse*, this does not necessarily mean there are more poor people; it means that the different income groups are more equal in size. We follow the contact argument here and expect a positive effect on trust: that people with a different economic background are less likely to compete with each other. They may even be complementary—a consultant needs a bakery, and a renter profits from the owner renovating his house and making the street more attractive to live in. In other words, more economic differences in the neighbourhood imply opportunities to build bridging ties that are likely to be positive in terms of social capital. The conflict argument states that meeting different people results in less trust. In this case, there is no potential 'conflict': economic differences are beneficial; hence there is no reason to expect the conflict argument.

Although economic diversity and the deprivation of neighbourhoods are related, one should distinguish between these two indicators: they are conceptually not equal and have quite different policy implications. We therefore hypothesise that

> H2 Economic diversity in the neighbourhood positively affects the quality of contact with neighbours, trust in the neighbourhood and inter-ethnic trust, both for immigrant and native residents, independent of the neighbourhood's mean income and irrespective of its ethnic, religious and language diversity.

Religious Diversity

McKay examined the effect of religious differences on the identity structures of ethnic groups, concluding that 'religion can divide more than ethnicity can unite' (1985: 327). In other words, religious differences may partly explain the effect of ethnic diversity. There is little knowledge of how religious diversity in neighbourhoods

affects social capital. Conflict theory would argue that religious diversity fosters out-group distrust and in-group solidarity. High religious diversity implies big differences between people with respect to their identity, norms and values. It is therefore likely that the conditions identified by Pettigrew (1998) for optimal intergroup contact are not met (such as common goals to be reached, or support of customs). We therefore hypothesise that

> H3 Religious diversity in the neighbourhood negatively affects the quality of contact with neighbours, trust in the neighbourhood and inter-ethnic trust, both for immigrant and native residents, independent of the religious affiliation and activity of the respondent, and irrespective of the ethnic, economic and language diversity of the neighbourhood.

Language Proficiency

In explaining trust, Leigh (2006) finds that linguistic diversity in the neighbourhood is more important than ethnic diversity. Furthermore, there is some evidence that the language proficiency of immigrants is associated with better inter-ethnic relations (Espenshade and Calhoun 1993). We do not have data on the different languages spoken by people in a neighbourhood, but we do have data on the Dutch-language proficiency of the four main non-Western immigrant groups. We therefore constructed a measure of Dutch-language proficiency on the neighbourhood level. According to the contact argument, a higher level of Dutch-language proficiency in the neighbourhood implies fewer barriers between people, resulting in higher levels of social capital. We therefore hypothesise that

> H4 Dutch-language proficiency in the neighbourhood positively affects the quality of contact with neighbours, trust in the neighbourhood and inter-ethnic trust, both for immigrant and native residents, independent of individual language proficiency.

Data and Measurement

For measurement, we use the 'Sociale Positie en Voorzieningengebruik van Allochtonen'—Social Position and Facilities Use of Ethnic Minorities or SPVA (Martens 1999). The SPVA survey is the main data source for monitoring the disadvantage of ethnic minorities in the Netherlands, sampling households from the four largest immigrant ethnic-minority groups—Turks, Moroccans, Surinamese and Antilleans—and a comparable native Dutch sample. It is a stratified sample, in which the respondents are selected from 13 communities with relatively large numbers of these four minority groups. Whereas the share of immigrants in the sample is larger than in the Dutch population, the survey aims to be representative for the Netherlands with respect to the characteristics of the communities and the socio-economic background of the respondents.

Within the SPVA, an individual is classified into a minority group if he or she was born in the respective country or if one parent was born there. First-generation immigrants are defined as those who are born in Turkey, Morocco, Suriname or the Dutch Antilles. Second-generation immigrants are those born in the Netherlands with at least one parent born in one of our four sample countries, or those who were born abroad and migrated to the Netherlands when younger than six years old.

Since the SPVA provides the four-digit zip codes of the respondents, we use this as the neighbourhood level in our analyses. Dutch four-digit zip codes can be linked to local neighbourhoods (*buurten*), as defined by the municipalities.[1] Since the borders often also mark building styles and periods, neighbourhoods are relatively homogenous with respect to socio-demographic characteristics (Wittebrood and Van Dijk 2007). Dutch zip-code areas are somewhat less homogenous than neighbourhoods because, as opposed to neighbourhoods, their borders are defined to facilitate postal distribution, not as an indication of local neighbourhoods. However, the size of the population in a zip-code area is very similar across the Netherlands—like American census tracts—while the size of the population of neighbourhoods varies more.

The Dependent Variables

We construct three measures of social trust in the neighbourhood. The first two are scales to measure the quality of contact with one's direct neighbours, and trust in one's neighbourhood. These scales contain items on respondents' opinions with respect to their neighbours and neighbourhood, and the quality and frequency of contact with their direct neighbours and people in their neighbourhood. The third dependent variable—a measure of social distance or inter-ethnic trust—contains two items measuring the respondent's opinion on the ethnic background of a hypothetical partner and of the friends of the respondents' children. These range from 'very disturbing' to 'not disturbing at all' (comparable to Bogardus 1933). These three scales are referring to different forms of social trust: the first to the *quality of contact* with respondents' direct neighbours, the second to trust in the neighbourhood and the third to trust between ethnic groups. The correlations between the three indicators underline this difference: between the first two it is 0.50, between the first two and the last it is 0.

To measure the different forms of social capital, a non-parametric IRT model for finding cumulative scales is used—the so-called 'Mokken scaling method' (Mokken 1996)—and a reliability analysis. The Mokken analysis and the Cronbach's Alpha show that each of the scales has the same psychometric characteristics for the five ethnic groups included.[2] Whereas these scales contain both cognitive and behavioural items, the scaling techniques used clearly indicate that the items in the scales measure a single construct (see Lancee and Dronkers 2010).

Independent Variables at the Individual Level

In our analysis we control for gender, age, being married, educational attainment, religious affiliation, religious activity, family income, home ownership, Dutch citizenship, ethnicity and being a second-generation immigrant. Furthermore, to control for the language proficiency of the respondent we constructed a Mokken scale[3] (see Lancee and Dronkers 2010).

Independent Variables at the Zip-Code and Municipality Levels

On the zip-code level we include the following variables. First, based on the percentage of ethnic groups living in the respective zip-code area, we construct a Herfindahl Index of ethnic diversity (range: −1 to 0).[4] A value of −1 on the index implies no diversity at all, i.e. the neighbourhood consists of one ethnic group only. A higher value means that more people in the neighbourhood have a different ethnicity and these groups are of more equal size. The Herfindahl Index is criticised as being 'colour blind' (Stolle *et al.* 2008; Voas *et al.* 2002)—that is, a neighbourhood with 20 per cent immigrants and 80 per cent natives has the same score as the reverse. Whereas one might argue that this is exactly the objective of an index of diversity, the specific ethnic composition of a neighbourhood *does* matter. Therefore, additional analyses were done with the percentage of native Dutch *and* with the percentage of immigrants in the neighbourhood. The results are similar to those obtained when including the Herfindahl Index.

The measure of economic diversity is a Herfindahl Index based on the percentage of people in the neighbourhood with an income lower than or equal to 40 percentage points of the national income distribution, between 41 and 80 points, and above 80. Higher economic diversity therefore implies that these three income groups are more equal in size; a lower economic diversity means that one of the groups is larger than the others.

Religious diversity is measured with a Herfindahl Index containing the fraction of people in the neighbourhood who define themselves as belonging to a certain religion. The categories included are: Catholic, Protestant, Sunni, Shiite Alevi, Ahmadiyya plus 'other Islam'; Sanatam Dharam; Arya Samaj plus 'other Hindu', no religion or 'other' religion.[5] The interpretation is similar to that of the index of ethnic diversity: the minimum means that there is one religion in the neighbourhood; the maximum that everybody in the neighbourhood has a different religious denomination.

Last, language proficiency is measured as the Dutch-language proficiency per ethnic group per neighbourhood, weighted by the number of people in each ethnic group who live in the respective neighbourhood. We include the following ethnic groups: Turks, Moroccans, Surinamese, Antilleans, EU immigrants, native Dutch and other non-Western immigrants.[6]

Furthermore, we control for mean income, population density of the neighbourhood and percentage of people older than 65 years.

Results

In Table 1a, a descriptive overview of the individuals in the sample is presented; Table 1b presents the descriptive statistics of the variables at the zip-code level.[7]

Table 2 shows the correlations between the three dependent variables and the diversity indices. Only the language and ethnic-diversity indices are highly correlated (−.86), which means that they have a large common component (about 74 per cent). Analyses (not shown here) do not show a too-high level of multicollinearity.[8] Economic diversity is negatively related with ethnic diversity (−.48), but they have only 23 per cent in common. Religious diversity is positively related to ethnic diversity (.55), and they have 30 per cent in common. Trust in neighbourhood and quality of contact with neighbours are positively related (.49) but, given a common component of 24 per cent, they cannot be considered the same.

Quality of Contact with the Neighbours

Table 3 presents a multilevel regression model predicting quality of contact with direct neighbours. Model 1 only contains the indices of diversity; the coefficient of ethnic diversity is negative and significant, but the coefficient of religious diversity is positive. This means that respondents have lower-quality contact with neighbours in ethnically diverse neighbourhoods but higher-quality contact in religiously diverse ones. We expected the former result, but not the latter. Language and economic diversity have no significant effect. In Model 2, the ethnic groups and a dummy for second-generation immigrants are added. Whereas for Turks and Moroccans the quality of contact with their neighbours is no different to that for native Dutch, we find that the Surinamese, Antilleans and second-generation immigrants have a lower quality of contact with their neighbours. The coefficients of ethnic and religious diversity remain significant. Controlling for the remaining individual characteristics (Model 3), we see that the effects of ethnic and religious diversity barely diminish and remain significant. Furthermore, when controlling for individual characteristics, only Turks have a significantly higher quality of contact with their neighbours, when compared to the native Dutch. Age, being married, attendance at religious services, language proficiency and house ownership increase the quality of contact with neighbours. Model 4 introduces neighbourhood characteristics. After this inclusion the parameter of religious diversity becomes insignificant, while that of ethnic diversity becomes even more negative. In Model 5 we add the hypothesised interactions between forms of diversity and being Dutch. Only one interaction is significant: Dutch residents living in religiously diverse neighbourhoods have lower-quality contact with their neighbours ($.034 - .069 = -0.35$), while the immigrant

Table 1a. Descriptive statistics: individual-level variables

	Native Dutch		Immigrants		Immigrants + natives	
	Mean	SD	Mean	SD	Mean	SD
Quality of contact/neighbours	0.64	0.13	0.61	0.14	0.61	0.14
Trust in neighbourhood	0.65	0.18	0.62	0.18	0.63	0.18
Inter-ethnic trust	0.69	0.22	0.72	0.27	0.71	0.26
Age	50.46	17.82	39.49	12.81	41.10	14.20
Dutch-language proficiency	1.00	0.00	0.60	0.33	0.66	0.34
Family income	3,451.84	2,118.41	2,648.35	1,462.86	2,765.80	1,600.86
Church attendance	0.24	0.33	0.51	0.40	0.47	0.40
	%	N	%	N	%	N
Married	38.12	276	45.48	1,910	44.39	2,186
Female	48.20	350	40.07	1,683	41.27	2,032
Religious affiliation						
No religion	50.83	368	9.74	409	15.78	777
Hindu	0.14	1	8.55	359	7.31	360
Muslim	0.14	1	50.81	2,134	43.36	2,135
Christian	45.72	331	28.52	1,198	31.05	1,529
Other religion	2.76	20	1.64	69	1.81	89
Educational level						
Primary	22.65	164	48.07	2,019	44.33	2,183
Lower secondary	24.17	175	19.50	819	20.19	994
Upper secondary	22.38	162	19.98	839	20.33	1,001
College/university	28.45	206	9.52	400	12.31	606
No information	2.35	17	2.93	123	2.84	140
Dutch citizen	100.00	724	70.31	2,953	74.68	3,677
Owns house	42.96	311	12.57	528	17.04	839
Distribution ethic groups					%	N
Turks					21.04	1,036
Moroccans					21.69	1,086
Surinamese					26.62	1,311
Antilleans					15.94	785
Native Dutch					14.70	724
Sample					100.00	4,924

Source: SPVA (1998).

Table 1b. Descriptive statistics: zip-code and municipality-level variables

		Mean	SD	Range
Zip-code level (N = 260)	Ethnic diversity	−0.29	0.20	−1–0
	Religious diversity	−0.32	0.20	−1–0
	Dutch-language proficiency	0.57	0.24	0–1
	Economic diversity	−0.09	0.06	−1–0
	Mean income per person	0.48	0.09	0–1
	Population density	0.37	0.20	0–1
	% over 65 years	0.33	0.15	0–1

Source: Statistics Netherlands, SPVA survey (1991), (1994), (1998), (2002).

Table 2. Correlation between diversity in the neighbourhood and the dependent variables

	Diversity					
Diversity	Ethnic	Dutch-lang. proficiency	Economic	Religious	Quality contact/ neighbrs	Trust in neighb'hd
Dutch-lang. proficiency	−0.86	1.00				
Economic	−0.48	0.55	1.00			
Religious	0.55	−0.57	−0.41	1.00		
Qual. contact/ neighbours	−0.13	0.11	0.07	−0.03	1.00	
Trust in neighbourhood	−0.14	0.13	0.08	−0.05	0.49	1.00
Inter-ethnic trust	−0.09	0.17	0.13	−0.11	0.00	0.00

residents there have higher-quality contact (.034). The effect of neighbourhoods' ethnic diversity remains unchanged by this inclusion.

These results support our first hypothesis: living in a more-ethnically diverse neighbourhood decreases the quality of contact with neighbours, independent of the other types of diversity. H2, on the positive effect of economic diversity on quality of contact with neighbours, is not upheld by our data. H3—the effect of religious diversity—is partly upheld: the effect is negative for Dutch and positive for immigrant residents. Individual attendance at religious services increases the quality of contact with neighbours. Finally H4, on the positive effect of Dutch-language proficiency in the neighbourhood, is not upheld, although *individual* Dutch-language proficiency *does* increase the quality of contact.

Trust in the Neighbourhood

In Table 4 we present an analogous multilevel analysis explaining trust in the neighbourhood. Model 1 shows a negative relationship between ethnic diversity and trust, but a positive relation between religious diversity and trust in the neighbourhood. We expected the former result, but not the latter. Language and economic diversity have no significant effect on trust. In Model 2 it appears that Turks trust their neighbourhood more than do native Dutch; Antilleans and second-generation immigrants less. The negative effect of ethnic diversity becomes smaller but is still significant, while the positive relation between religious diversity and trust in the neighbourhood becomes insignificant. In Model 3, only individual characteristics have significant parameters: age, being married, attendance at religious services, Dutch-language proficiency and house ownership have a positive effect, while having a university or college degree has a negative one. The four dimensions of neighbourhood diversity no longer have any significant effect. In Model 4, neighbourhood characteristics are added. Although both population density and

Table 3. Multilevel linear regression predicting quality of contact with one's neighbours, $N_{indiv} = 4{,}924$; $N_{zipcode} = 260$; $N_{mun} = 13$ (standardised coefficients 0–1, standard errors between brackets)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	b	se	b	se	b	se	b	se	b	se
Diversity										
Ethnic	−.124***	(.025)	−.107***	(.025)	−.082***	(.025)	−.069**	(.025)	−.084**	(.027)
Religious	.046**	(.014)	.041**	(.014)	.031*	(.014)	.023	(.015)	.034*	(.016)
Dutch-language proficiency	−.006	(.021)	.008	(.022)	.009	(.021)	.010	(.023)	.013	(.023)
Economic	.014	(.059)	.009	(.059)	−.007	(.058)	.078	(.078)	.080	(.081)
Individual characteristics										
Dutch			ref.		ref.		ref.		ref.	
Turkish			.003	(.007)	.029*	(.013)	.028*	(.013)	−.012	(.038)
Moroccan			−.009	(.007)	.017	(.013)	.016	(.013)	−.024	(.038)
Surinamese			−.015*	(.007)	.001	(.008)	−.001	(.008)	−.041	(.036)
Antillean			−.031***	(.007)	−.002	(.008)	−.003	(.009)	−.044	(.036)
Second generation			−.020**	(.008)	−.010	(.008)	−.010	(.008)	−.009	(.008)
Female					.002	(.005)	.002	(.005)	.002	(.005)
Age					.073***	(.013)	.076***	(.013)	.076***	(.013)
Married					.016**	(.005)	.015**	(.005)	.016**	(.005)
Church attendance					.045***	(.006)	.045***	(.006)	.045***	(.006)
No religion					ref.		ref.		ref.	
Hindu					−.002	(.010)	−.002	(.010)	−.001	(.010)
Muslim					−.004	(.010)	−.003	(.010)	−.003	(.010)
Christian					−.010	(.007)	−.010	(.007)	−.008	(.007)
Other religion					−.021	(.016)	−.022	(.016)	−.022	(.016)
Educational level										
Primary education					ref.		ref.		ref.	
Lower secondary					.006	(.006)	.006	(.006)	.006	(.006)
Upper secondary					.009	(.006)	.009	(.006)	.009	(.006)
College/university					−.001	(.007)	.001	(.007)	−.001	(.008)
No information					.022	(.012)	.022	(.012)	.022	(.012)

Table 3 (*Continued*)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	b	se	b	se	b	se	b	se	b	se
Language proficiency					.046***	(.010)	.045***	(.010)	.045***	(.010)
Dutch citizen					.006	(.006)	.006	(.006)	.006	(.006)
Family income					.030	(.023)	.031	(.023)	.032	(.023)
Home ownership					.029***	(.006)	.029***	(.006)	.030***	(.006)
Neighbourhood characteristics										
Mean income per person							−.081	(.052)	−.092	(.052)
Population density							−.027	(.016)	−.024	(.016)
% over 65 years							−.010	(.019)	−.007	(.019)
Interaction terms										
Dutch*ethnic diversity									.054	(.060)
Dutch*income diversity									.059	(.143)
Dutch*religious diversity									−.069*	(.034)
Dutch*language diversity									−.058	(.064)
Constant	.598***	(.012)	.604***	(.014)	.489***	(.019)	.551***	(.033)	.592***	(.044)
Log-likelihood	2,668.80		2,688.60		2,778.0		2,781.20		2,785.20	
AIC	−5,323.50		−5,353.10		−5,500.0		−5,500.40		−5,500.50	
Prop. reduced variance										
Level 2 (zip code)	.56		.59		.61		.67		.68	
Level 1 (individual)	.00		.01		.04		.04		.05	

Source: SPVA (1998), Statistics Netherlands; *p < 0.05, **p < 0.01, ***p < 0.001, two-tailed tests.

Table 4. Multilevel linear regression predicting trust in the neighbourhood $N_{indiv} = 4{,}924$; $N_{zipcode} = 260$; $N_{mun} = 13$ (standardised coefficients 0–1, standard errors between brackets)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	b	se	b	se	b	se	b	se	b	se
Diversity										
Ethnic	−.131***	(.034)	−.106**	(.033)	−.063	(.033)	−.032	(.033)	−.048	(.036)
Religious	.041*	(.019)	.035	(.019)	.014	(.019)	−.005	(.019)	.014	(.021)
Dutch-language proficiency	.005	(.030)	.028	(.029)	.036	(.029)	.024	(.030)	.023	(.032)
Economic	.051	(.082)	.055	(.079)	.056	(.079)	.234*	(.103)	.263*	(.108)
Individual characteristics										
Dutch			ref.		ref.		ref.		ref.	
Turkish			.023*	(.009)	.011	(.017)	.009	(.017)	.023	(.048)
Moroccan			−.013	(.009)	−.026	(.017)	−.028	(.017)	−.014	(.048)
Surinamese			−.012	(.009)	−.001	(.010)	−.003	(.010)	.010	(.046)
Antillean			−.035***	(.010)	−.006	(.011)	−.008	(.011)	.005	(.046)
Second generation			−.015	(.010)	.013	(.010)	.014	(.010)	.015	(.010)
Female					.007	(.006)	.006	(.006)	.006	(.006)
Age					.088***	(.017)	.091***	(.017)	.092***	(.017)
Married					.028***	(.007)	.026***	(.007)	.027***	(.007)
Church attendance					.053***	(.008)	.053***	(.008)	.052***	(.008)
No religion					ref.		ref.		ref.	
Hindu					.006	(.013)	.005	(.013)	.007	(.013)
Muslim					.019	(.013)	.019	(.013)	.020	(.013)
Christian					−.000	(.009)	−.001	(.009)	.002	(.009)
Other religion					−.022	(.020)	−.024	(.020)	−.023	(.020)
Educational level										
Primary education					ref.		ref.		ref.	
Lower secondary					−.007	(.007)	−.007	(.007)	−.007	(.007)
Upper secondary					−.015	(.008)	−.014	(.008)	−.015	(.008)
College/university					−.025**	(.010)	−.023*	(.010)	−.025**	(.010)
No information					.015	(.016)	.015	(.016)	.015	(.016)

Table 4 (*Continued*)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	b	se	b	se	b	se	b	se	b	se
Language proficiency					.036**	(.012)	.035**	(.012)	.036**	(.012)
Dutch citizen					−.008	(.008)	−.008	(.008)	−.008	(.008)
Family income					.014	(.029)	.015	(.029)	.017	(.029)
Home ownership					.050***	(.008)	.052***	(.008)	.053***	(.008)
Neighbourhood characteristics										
Mean income per person							−.133*	(.068)	−.156*	(.069)
Population density							−.054**	(.021)	−.053*	(.021)
% over 65 years old							.023	(.025)	.026	(.025)
Interaction terms										
Dutch*ethnic diversity									.073	(.077)
Dutch*income diversity									−.047	(.183)
Dutch*religious diversity									−.112**	(.043)
Dutch*language diversity									−.005	(.082)
Constant	.606***	(.017)	.606***	(.018)	.505***	(.025)	.609***	(.043)	.608***	(.058)
Log-likelihood	1,459.00		1,484.70		1,591.30		1,598.3		1,602.00	
AIC	−2,904.00		−2,945.40		−3,126.60		−3,134.5		−3,134.00	
Prop. reduced variance										
Level 2 (zip code)	.43		.54		.54		.61		.60	
Level 1 (individual)	.00		.01		.05		.05		.05	

Source: SPVA 1998, Statistics Netherlands; *p < 0.05, **p < 0.01, ***p < 0.001, two-tailed tests.

Table 5. Multilevel linear regression predicting inter-ethnic trust, $N_{indiv} = 4{,}924$; $N_{zipcode} = 260$; $N_{mun} = 13$ (standardised coefficients 0–1, standard errors between brackets)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	b	se	b	se	b	se	b	se	b	se
Diversity										
Ethnic	.298***	(.059)	.087	(.045)	.030	(.043)	.039	(.044)	−.007	(.047)
Religious	−.074*	(.032)	−.060*	(.025)	−.035	(.024)	−.045	(.025)	−.025	(.026)
Dutch-language proficiency	.328***	(.054)	.065	(.040)	.009	(.038)	.012	(.040)	−.004	(.042)
Economic	.331*	(.139)	.253*	(.106)	.169	(.100)	.286*	(.134)	.284*	(.139)
Individual-level characteristics										
Dutch			ref.		ref.		ref.		ref.	
Turkish			−.119***	(.011)	.065**	(.020)	.065**	(.020)	.079	(.058)
Moroccan			−.110***	(.011)	.067***	(.020)	.067**	(.020)	.082	(.058)
Surinamese			.154***	(.011)	.224***	(.012)	.223***	(.012)	.238***	(.056)
Antillean			.193***	(.012)	.240***	(.013)	.239***	(.013)	.253***	(.056)
Second generation			.047***	(.012)	−.015	(.012)	−.014	(.012)	−.013	(.012)
Female					.006	(.007)	.006	(.007)	.004	(.007)
Age					.007	(.020)	.008	(.020)	.008	(.020)
Married					−.025**	(.008)	−.026**	(.008)	−.025**	(.008)
Church attendance					−.079***	(.009)	−.079***	(.009)	−.081***	(.009)
No religion					ref.		ref.		ref.	
Hindu					−.102***	(.015)	−.103***	(.015)	−.102***	(.015)
Muslim					−.033*	(.016)	−.033*	(.016)	−.033*	(.016)
Christian					−.000	(.010)	−.000	(.010)	.003	(.010)
Other religion					−.018	(.024)	−.018	(.024)	−.017	(.024)
Educational level										
Primary education					ref.		ref.		ref.	
Lower secondary					.017	(.009)	.017	(.009)	.016	(.009)
Upper secondary					.033***	(.009)	.033***	(.009)	.032***	(.009)
College/university					.068***	(.011)	.069***	(.012)	.067***	(.012)
No information					−.001	(.019)	−.001	(.019)	−.002	(.019)

Table 5 (*Continued*)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	b	se	b	se	b	se	b	se	b	se
Language proficiency					.110***	(.015)	.109***	(.015)	.111***	(.015)
Dutch citizen					.037***	(.009)	.037***	(.009)	.037***	(.009)
Family income					−.013	(.035)	−.011	(.035)	−.011	(.035)
Home ownership					.012	(.009)	.013	(.009)	.014	(.009)
Neighbourhood characteristics										
Mean income per person							−.101	(.086)	−.140	(.087)
Population density							.002	(.027)	.003	(.027)
% over 65 years old							.032	(.032)	.036	(.032)
Interaction terms										
Dutch*ethnic diversity									.255**	(.093)
Dutch*income diversity									.205	(.222)
Dutch*religious diversity									−.106*	(.053)
Dutch*language diversity									.127	(.099)
Constant	.617***	(.030)	.680***	(.024)	.544***	(.031)	.590***	(.054)	.594***	(.071)
Log-likelihood	−204.70		456.30		662.40		663.30		669.60	
AIC	423.50		−888.70		−1,268.70		−1,264.60		−1,269.20	
Proportion reduced variance										
Level 2 (zip code)	.41		.76		.81		.82		.82	
Level 1 (individual)	.00		.23		.29		.29		.29	

Source: SPVA (1998) Statistics Netherlands; *p < 0.05, **p < 0.01, ***p < 0.001, two-tailed tests.

neighbourhood income have a negative effect on trust in one's neighbourhood, the effect of economic diversity becomes positive and significant. In Model 5 we add the hypothesised interactions between forms of diversity and being Dutch. Only one interaction is significant: Dutch residents living in religiously diverse neighbourhoods have lower trust in their neighbourhood (−.112), while the religious diversity of the neighbourhood does not affect the trust of immigrant residents. However, the effect of neighbourhoods' economic diversity remains unchanged by this inclusion.

These results do not support H1: living in a more-ethnically diverse neighbourhood is not related to trust in the neighbourhood, independent of the other dimensions of diversity. H2—the positive effect of economic diversity on trust in the neighbourhood—is upheld by our data. However, a higher average income in the neighbourhood decreases trust; individual family income has no effect. Our third hypothesis—the effect of religious diversity—is partly upheld: religiously diverse neighbourhoods decrease the trust of Dutch residents, but not of immigrants. However, individual religious-service attendance increases trust. Finally, H4—the positive effect of Dutch-language proficiency in the neighbourhood—is not upheld, though *individual* Dutch-language proficiency increases this trust.

Inter-Ethnic Trust

In Table 5 we present an analogous multilevel analysis explaining inter-ethnic trust. Model 1 shows multivariate relations between diversity and inter-ethnic trust. Religious diversity negatively affects inter-ethnic trust, while ethnic and economic diversity, and language proficiency, positively affect it. Model 2 shows that Surinamese and Antilleans have higher inter-ethnic trust than natives, while second-generation immigrants have higher inter-ethnic trust than the first-generation or the native Dutch. However the coefficients of ethnic diversity and language proficiency become insignificant, while the effects of economic and religious diversity become smaller but are still significant. After the addition of individual characteristics, all significant effects of a neighbourhood's diversity disappear. Only individual-level variables have significant effects. Hindu or Muslim residents have lower inter-ethnic trust than non-religious residents, attendance at religious services also decreases it. Dutch citizenship and Dutch-language proficiency increase inter-ethnic trust, as does having secondary education. Second-generation immigrants do not have more inter-ethnic trust after the inclusion of individual characteristics, while all immigrant groups have a higher inter-ethnic trust than Dutch residents. After the addition of neighbourhood characteristics, economic diversity becomes significant and positive again, although none of the added variables are significant. In Model 5 we add the hypothesised interactions between forms of diversity and being Dutch. Two are significant: firstly, Dutch residents living in religiously diverse neighbourhoods have lower inter-ethnic trust (−.106), while not affecting that of immigrant residents; and secondly, Dutch residents living in ethnically diverse neighbourhoods have higher inter-ethnic trust

(.255), while immigrant residents are unaffected. Nevertheless, the effect of neighbourhoods' economic diversity remains unchanged by this inclusion.

These results only partly support H1: living in a more-ethnically diverse neighbourhood is positively related to inter-ethnic trust, but only for Dutch natives. Our second hypothesis, on the positive effect of economic diversity on inter-ethnic trust, is upheld by our data. H3, the effect of religious diversity, is partly upheld: Dutch residents of religiously diverse neighbourhoods have lower inter-ethnic trust, but this is not true for immigrants. Moreover, individual religious-service attendance decreases inter-ethnic trust. Finally, H4—the positive effect of Dutch-language proficiency in the neighbourhood—is not upheld, although *individual* Dutch-language proficiency increases it.

Discussion

The main finding is the importance of other types of diversity in the neighbourhood for variation in the social trust of residents. Religious diversity in neighbourhoods decreases the quality of contact with neighbours, trust in the neighbourhood and inter-ethnic trust, but only for the Dutch natives. Economic diversity in neighbourhoods increases trust in the neighbourhood and inter-ethnic trust. The negative effect of ethnically diverse neighbourhoods on the quality of contact with neighbours remains significant, even if one controls for other dimensions of diversity: economic, religious and language. This is, however, the only significant effect of ethnic diversity on social trust. We do not find an association between ethnically diverse neighbourhoods and trust in the neighbourhood, neither for the immigrants, nor for the natives.

Moreover, Dutch natives living in an ethnically diverse neighbourhood have *more* inter-ethnic trust than those living in less-diverse neighbourhoods. In other words, the quality of contact with one's neighbours is something other than trust in other ethnic groups than one's own. This is reflected in our results: ethnic diversity has a positive effect on the level of inter-ethnic trust of Dutch residents, but a negative effect on the quality of contact with neighbours for everybody.

Apparently, some forms of diversity in the neighbourhood fit the 'contact argument', while others have the opposite effect and follow the 'conflict' argument. A possible explanation for this bifurcation can be found in inter-group theory (Allport 1979; Pettigrew 1998), which states that the positive impact of contact between different (ethnic) groups is at a maximum when five conditions are met: equal status between groups, common goals to be reached, inter-group cooperation, support of laws and customs and the potential for friendship. Whether diversity in the neighbourhood fosters or discourages social trust depends on meeting or not meeting these conditions. An explanation can be that ethnic and religious diversity imply dealing with different values and norms. Adherents of different religions and persons originating from different ethnic cultures can more easily collide about values and norms, thus making it less likely that conditions for optimal contact—such as

common goals or the support of customs—are met. Put differently: when values and norms are too different, conditions for optimal contact are not met.

The negative effect of ethnically diverse neighbourhoods on the quality of contact with neighbours shows that Putnam's (2007) result is also valid in a European welfare state like the Netherlands. We do not, however, find any support for the constrict hypothesis, as formulated by Putnam (2007): ethnic differences in neighbourhoods in the Netherlands result in *more* inter-ethnic trust for native residents. Apparently, when being confronted with ethnic diversity in the neighbourhood, general trust is lower, but this effect cannot be attributed to less trust in other ethnic groups. Ethnic diversity in the neighbourhood makes contact between ethnic groups unavoidable; this might lead to more inter-ethnic trust compared with a situation of no contact between ethnic groups.

On the other hand, an economically diverse neighbourhood might contribute to some of the conditions outlined by Allport, and hence facilitate contact between different (ethnic) groups. That is, economic differences in the neighbourhood also imply dealing with different values and norms, but these are less linked to one's identity and hence do not result in less trust. On the contrary, economic differences can be synergetic and therefore contribute to meeting the conditions for optimal contact between groups, both with respect to the neighbourhood and to other ethnic groups.

Another conclusion from our analyses is that policies aimed at ethnically diverse neighbourhoods in order to promote ethnic integration at the societal level might have the unintended inverse effect of decreasing the quality of contact with the neighbours (compare with Musterd 2003). Promoting economically diverse neighbourhoods in order to build more (inter-ethnic) trust has a better chance of being successful. Moreover, policy-makers should not confuse ethnic with economic diversity; our analyses clearly show that these are two different concepts.

Finally, our results show that diversity in the neighbourhood does not only have negative effects on social trust. A higher level of diversity can, under certain conditions, help to overcome cleavages between ethnic and religious groups, and can be interpreted as support for the optimistic vision of Putnam on the long-term possibilities of integration of these ethnic and religious groups.

Acknowledgement

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Notes

[1] For more information on our measurement and handling of neighbourhoods, see Lancee and Dronkers (2010).

[2] More information about the scale items, the Mokken analysis and Cronbach's Alpha is available from the authors.

[3] The language items were not included for native Dutch respondents—who were therefore given the highest value on the scale—since it is their mother tongue.

[4] A Herfindahl Index is calculated as follows: $HI = -1^{*}(\Sigma p_i^2)$, where p_i is the proportion of each ethnic group in neighbourhood i. The ethnic groups included are: Turks, Moroccans, Antilleans, Surinamese, Other non-Western immigrants, Western immigrants, and native Dutch. The data used are the '*Kerncijfers wijken en buurten 2004*', obtainable from Statistics Netherlands.

[5] Since religious denomination is not (publicly) available on the neighbourhood level, we used data from the 1994, 1998 and 2002 waves of the SPVA survey (where people are asked to mention their religious affiliation) and Statistics Netherlands to construct a measure on the neighbourhood level. Second, since the SPVA sample is not representative for the neighbourhood, the fraction of ethnic groups that live in a neighbourhood according to Statistics Netherlands is used to weigh the survey information. By combining denomination and ethnicity from the SPVA with the true neighbourhood values of ethnic groups as provided by Statistics Netherlands, the result is the fraction of people in a neighbourhood who consider themselves as belonging to a particular religion. These fractions are converted to a Herfindahl Index, as described in Note 4.

[6] The measure for language proficiency in the neighbourhood is constructed in a similar way to that of religious diversity. The language proficiency scores per ethnic group in the combination of 1991, 1994, 1998 and 2002 waves of the SPVA were weighted by the fraction of the ethnic group that lives in the neighbourhood. Native Dutch received the highest value on the scale.

[7] Initially, we controlled on the neighbourhood level for the percentage in high education, per cent renters, and moving house mobility, and on the municipality level for the percentage of violent crimes and urban domicile, but they are insignificant and do not affect the other parameters.

[8] First, there were no 'jumping' parameters. Second, collinearity diagnostics were performed. The highest VIF is 8.27 for ethnic diversity. This is high, but below the often-mentioned threshold of 10. Third, we estimated the (full) models excluding one measure of diversity each time. This did not yield substantially different results, with one exception: when excluding ethnic diversity, language proficiency positively affects trust in one's direct neighbours.

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