Do diverse geographical contexts lead to diverse friendship networks? A multilevel analysis of Belgian survey data

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ABSTRACT

The choice-constraint approach assumes that the choice of one's friends will be determined by both individual choices and the constraints imposed by one's interaction context. Trends towards homophily however, might counteract this effect if actors consistently seek interaction partners with the same background characteristics. In this study we investigate the impact of community level diversity on the cultural diversity of friendship networks. Based on a multilevel analysis of recent survey data from Flanders (Belgium), we demonstrate that community level diversity has a significant but limited impact on ethnic and religious friendship network diversity. Controlling for individual level characteristics, residents of ethnically diverse communities report more ethnically and religiously diverse friendships. The fact that ethnic and religious diversity overlap to such a large extent suggests that both divisions are closely related in contemporary secularized European societies.

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1. Introduction

In the study of intercultural relations, personal networks are considered as crucially important. Allport's (1954) contact theory, the main framework of analysis for intergroup relations, states that equal status, common goals, intergroup cooperation and the support of authorities are crucial conditions for intergroup contact to reduce prejudice. In an influential reformulation of intergroup contact theory, Pettigrew (1998) added a fifth condition, largely comprising the previous four: the situation must allow the participants to develop friendship ties. Although positive effects also occur in absence of these conditions, they are significantly stronger when intergroup friendships are formed (Pettigrew & Tropp, 2006; Pettigrew, Tropp, Wagner, & Christ, 2011). The proximity of out-group members by itself, whether this occurs at the level of the community, the school or the work place, is a necessary but not a sufficient condition for social contact, as ethnic boundaries have a tendency to reproduce themselves in mixed environments (Festinger & Kelley, 1951; Schofield, 1991).

The influence of the proximity of diverse groups on personal intergroup relations therefore is a crucial mechanism to understand this process. In this article, we investigate the role of structural contact opportunities on the composition of personal social networks using multi-level analysis techniques. More precisely we investigate if and to what extent a diverse geographical context is associated with more ethnically and religiously diverse friendship networks.

The analysis will be performed using representative survey data from Flanders, the Northern region of Belgium (SCIF Survey 2009). A unique feature of this dataset is that it combines individual face-to-face survey data that were collected in 2009 ($n=2080$) with aggregate real-life data on the local communities of the respondents ($n=40$). These data allow us to investigate the impact of community characteristics on individual networks in a reliable manner.

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In this article, we first review the literature on the impact of context on social networks, diversity and friendship, before providing more information about data and methods. The results section is followed by a conclusion, highlighting the theoretical relevance of our findings.

1.1. *Social ties and context*

One of the general laws of social interaction is that birds of a feather flock together (Lazarsfeld & Merton, 1954). People with similar backgrounds, having similar lifestyles, with similar opinions, and in the same phase of the life cycle are more likely to develop common bonds than people who do not share these background characteristics. That similarity breeds connection, is an established fact in a number of life domains, and is labelled homophily (McPherson, Smith-Lovin, & Cook, 2001). Nonetheless, physical and geographical proximity is a first condition for contact. As Blau and Schwartz (1984) famously stated, you cannot marry an Eskimo if no Eskimo is around. A stronger presence in the direct proximity creates more possibilities for contact, and hence more opportunities to form relations (Pettigrew, 1998; Pettigrew & Tropp, 2006). The formation of personal networks in other words depends on structural constraints and opportunities (Blau, 1977; Fischer, 1982; Kalmijn & Flap, 2001; Marsden, 1990; Mollenhorst, 2009; Verbrugge, 1977). The choice-constraint approach emphasizes that individual choices with regard to the composition of one's personal network are constrained by the structural availability of potential network members (Blau, 1977). The composition of interaction contexts in this way partly determines the characteristics of one's personal network (Huckfeldt, 1983). The insights of the choice-constraint approach have been successfully applied in studies on the choice of dating and sexual partners (Laumann, Gagnon, Michael, & Michaels, 1994), marriage partners (Blau & Schwartz, 1984; Kalmijn & Flap, 2001), friendships (Mollenhorst, Völker, & Flap, 2008), professional relationships (Flap, Bulder, & Völker, 1998), relations among neighbors (Huckfeldt, 1983; Völker & Flap, 2007) and relations among school pupils (Baerveldt, van Duijn, Vermeij, & van Hemert, 2004; Van Houtte & Stevens, 2009). The homogeneity induced by the interaction setting is conceptualized as baseline homophily, or the amount of diversity one can expect if individual relations would completely reflect context characteristics. Applying this logic, one can assume that this baseline homophily is smaller for minority groups, as they have more opportunities to interact with the majority.

1.2. *Social ties and diversity*

A second pathway to investigate homophily, next to the contextual level, is the choice or preference for similarity. This form of homophily, when people tend to choose people similar to themselves from the pool of available contacts, is called inbreeding homophily. Interpersonal relations are considered to be more rewarding if both parties share the same interests and attitudes (Huston & Levinger, 1978). From the social identity perspective, this preference for similar people is explained by the need to belong to a specific group, and to accentuate the differences with other groups (Tajfel & Turner, 1979). The presence of an outgroup can be seen as a threat to the interests of one's own group, leading to a negative attitude towards the outgroup (Blalock, 1967; Levine & Campbell, 1972). Next to perceived group conflict, socialisation can also lead to similar negative attitudes towards outgroups. Personality traits such as authoritarianism (Adorno, Frenkel-Brunswick, Levinson, & Sanford, 1950) and close-mindedness (Rokeach, 1960) have as well been associated with outgroup prejudice. A last explanation for ingroup homophily outside of personal preferences is the peer pressure of groups, that can render the formation of heterogeneous ties more difficult (Granovetter, 1986). Hence, on the individual level it is clear that negative attitudes towards outgroups, together with group norms sanctioning intergroup ties, can limit the formation of intergroup connections (Ajzen & Fishbein, 1980). In a similar vein, it has been illustrated that the relation also works in the other direction. Diverse personal networks widen one's normative perspective, and prevent prejudice or hostile acts towards outgroup members (Briggs, 2004; Pettigrew, 1998; Pettigrew & Tropp, 2006; Putnam, 2000).

An important aspect in this regard is which markers of group boundaries are salient. Group boundaries can be based both on sociodemographic dimensions, such as race, ethnicity, religion, status, sex or age, as on more value based forms, such as opinions, and tastes. Culturally diverse networks are defined as linkages between identity based, culturally defined and ascribed group differences such as ethnicity, sexual preference, religion, gender and age (Wuthnow, 2002). This type of diversity is the focus of this study. Socio-economic diversity on the other hand is associated with the stratification of society and status differences, and has been the object of most research on homophily from a network perspective (Lin & Erickson, 2005). Network diversity of this type is mainly associated with more instrumental and material goals, and it is not necessarily linked to tolerance or a reduction of prejudice.

It is firmly established that ethnicity is one of the strongest contemporary group boundaries (Baerveldt, Zijlstra, de Wolf, Van Rossem, & Van Duijn, 2007; McPherson et al., 2001). In recent decades, immigration flows have turned Europe into an increasingly ethnically diverse society (Hooghe, Trappers, Meuleman, & Reeskens, 2008). In Belgium, one of the smaller member states of the European Union, non-nationals make up about 10% of the population. Ethnicity can be seen as an ascribed categorization based on both phenotypical and socio-historical characteristics (Bader, 2007). Studies suggest that the perception of ethnic outgroups is mainly determined by the idea of common descent or culture (Zagefka, 2009). For the Belgian context, this implies that mainly non-Europeans will be seen as an ethnically defined outgroup (Baerveldt et al., 2007; Van Acker & Vanbeselaere, 2011). Citizens from neighboring European countries, like the Netherlands or France, are not perceived as ethnically different by a majority of the original Belgian population.

Religion has been shown to be the second strongest group boundary marker, after ethnicity, despite the fact that its significance is diminishing (Kalmijn, 1998; McPherson et al., 2001). The majority of studies on religion and diversity focuses on differences between Protestants, Catholics and Jews in religiously heterogeneous countries (Kalmijn, 1998). Belgium, however, traditionally was dominated by Catholicism, with a very limited presence of Jewish, Protestant or Anglican minorities (Botterman and Hooghe, *in press*). As is the case in other countries in Western Europe, the influx of immigrants with an Islamic background during recent decades, have led to a renewed salience of religious cleavages, as concern about Islam as a social and political force has become more prevalent in Belgian society (Strabac & Listhaug, 2008). Religious diversity in Belgium, in practice therefore refers to the division between the original majority population (with a Christian tradition but heavily secularized) and (descendants of) immigrants with an Islamic background. Estimates are that Islam accounts for slightly less than five per cent of all inhabitants of Belgium (Husson, 2007).

Cultural diversity thus can be defined both in terms of ethnicity (place of birth or citizenship status) and religion (Europeans with a Christian or humanistic tradition vs. non-Europeans with an Islamic background). Given the specific demographic situation of Belgium we expect that both divisions largely overlap.

1.3. Friendship ties

Not all social relations are of equal value however. Family or one's partner can be seen as primary, very important ties, while neighbors, co-workers and acquaintances can be considered as less intensive, more superficial relations. Therefore social relations are usually classified in terms of tie strength, which is a combination of the amount of time, the emotional intensity, the intimacy and reciprocal services that characterize the tie (Granovetter, 1973). Adult friendship ties, the object of our study, take an intermediate position in terms of tie strength (Mollenhorst, 2009; Verbrugge, 1977). They are both pervasive and active, compared to neighbor and co-worker ties, and they involve frequent face-to-face contact and positive affect (Verbrugge, 1977). Friendship ties are important sources of emotional aid, companionship and assistance (Wellman & Wortley, 1990), and they are ranked high among the things that matter most in life (Klinger, 1977).

Given the importance and the strength of friendship ties, there is all the more reason to suppose they will be characterized by homophily. As Granovetter (1983, p. 220) expressed it: "*Homophilous ties are more likely to be strong*". It can be assumed, therefore, that the more intensive the tie strength is, the more likely it is that network members will have the same background characteristics (Burt, Marsden, & Rossi, 1985; Marsden, 1986, 1988).

At the same time, it has to be noted that 'friend' as such is a problematic notion for analysis, as it is not well-defined. As Fischer (1982, p. 288) points out, it is nevertheless a notion that cannot be abandoned by social science because it has an imprecise definition, because it is a basic folk concept actors use to order their world, and at the same time is part of the scientific intellectual apparatus. This has led Krackhardt (1992) to the development of the notion 'filos', to denote a close friend, with whom one interacts, towards whom one has affection, and with whom the relationship has already existed for some time. Other, more distant friends can nonetheless still be important sources of information (Burt, 1992) or benign interaction with diverse others (Pettigrew, 1998).

The definition of 'friend' therefore relies heavily on the measurement instruments used. Measurement with name generators and investigating social support (see e.g. Krackhardt, 1992; Baerveldt et al., 2004) focus on close core relationships, that are easily identifiable. Although there have been notable forms of measuring active, wider networks through name generator studies (see e.g. Roberts, Duncan, Pollet, & Kuppens, 2009), most studies on weak ties use an indirect approach, pioneered in the domain of socio-economic network diversity (Erickson, 1996; Lin & Dumin, 1986). Instruments such as the position generator (Lin & Dumin, 1986) ask the respondent if s/he knows someone having the listed occupations. By asking the respondent about a number of occupations, key information of a respondent's weak network, such as the socio-economic scope of the network, can be calculated. A recent approach by Van der Gaag, Snijders, and Flap (2005) mimicked this approach, but instead of looking at positions, they look at a variety of resources.

In a similar manner, in this study we measured diversity in weak ties, by asking about a number of categories of diversity. In the current analysis, two related forms of diversity in the wider friendship network are analyzed. As our measurement instrument probes for diversity in weak ties, we can expect less homophily than in previous studies on friendship networks.

1.4. The impact of cultural diversity on friendship ties

In summary, there is a vast array of empirical research on the cultural diversity of friendship networks, highlighting both individual level and community level determinants of diversity. On the individual level, it has been shown that younger people have more diverse networks (Briggs, 2007; Marsden, 1987). This can be explained by the increased structural availability of diverse 'others' among younger groups, and lower levels of ethnocentrism among younger age cohorts (Feld, 1981, 1982). It has also been suggested that the networks of older people are dominated more strongly by family members and kin, and self-evidently this too limits the degree of diversity within the network (Marsden, 1987). Due to different locations in the social sphere, and networks generally more oriented towards friends than kin, men have higher levels of network diversity than women (Moore, 1990). Higher educated actors tend to have more diverse friendship networks, and their levels of prejudice also tend to be lower (Wagner & Zick, 2006). Research in the U.S. nonetheless reports this is not the case for ethnic diversity (Marsden, 1987). With regard to ethnic diversity, nonreligious persons are more likely to have diverse friendship

networks (Briggs, 2007), which can be explained by a higher level of open-mindedness (Rokeach, 1960) and lower levels of prejudice against outgroups (Allport & Ross, 1967).

On the community level, it is expected that more diverse communities will lead to more diverse networks, as more opportunities for intergroup contact are present (Pettigrew, 1998). From Blau's (1977) theory on structural constraints, it can be deduced that members of ethnic or religious minority groups have a higher likelihood of meeting someone from a different ethnic group in comparison with members of the majority group (Marsden, 1988).

Within the literature, however, there is no consensus on what kind of geographical context exactly should be taken into consideration when studying friendship networks in the general population. Friendships do not stop at the end of the neighborhood, but the bulk of social contacts live close by Fischer (1982). Studies that explicitly model networks in neighborhoods show that neighborhood networks do remain important, even in contemporary societies (Völker & Flap, 2007). The intensity of contact in a friendship relation is markedly higher if the contact lives within approximately 10 km distance (Carrasco, Miller, & Wellman, 2008; Mok, Wellman, & Basu, 2007). It can be assumed therefore, that the population composition of that area will also be related to the characteristics of one's personal network. In the current study, geographical context is operationalized as the municipality of residence. In the Flemish region of Belgium, the average surface of a municipality is 44 km², or roughly a diameter of 7 km, which corresponds to the distance for friendship contact determined by using detailed GIS data (Carrasco et al., 2008; Mok et al., 2007). Therefore it can be assumed that the municipality is an adequate level to investigate the influence of community structure on friendship networks. An additional reason to use this level is the availability of administrative population statistics on this level.

This overview of the literature leads to two hypotheses that will guide us through the further analysis:

H1. Controlling for composition effects, both ethnic and religious network diversity will be higher in more diverse communities.

H2. Cultural network diversity will be higher among the younger, men, higher educated, and ethnic and religious minorities.

2. Data and methods

2.1. Sample

Since these hypotheses are ideally tested within a general population survey, a complete network design is impossible. Earlier research, however, has indicated that egocentric network measures in surveys can provide robust and representative information (Marsden, 1990). Egocentric network studies assemble data from a focal actor about the actor itself and about others to whom the focal actor is linked, rendering it possible to examine population samples (Marsden, 2005). These studies normally do not collect information from the other network members. The first study that included egocentric network measures was the 1985 U.S. General Social Survey (Burt, 1984), and this survey yielded numerous new insights on the extent, composition and structure of networks of U.S. citizens (Marsden, 1987, 1988; McPherson, Smith-Lovin, & Brashears, 2006). The current study too relies on a general population survey, the Social Cohesion Indicators Flanders (SCIF) Survey. The SCIF survey is a representative survey of 2080 respondents between 18 and 85 years old, conducted between April and July 2009 in the Northern autonomous region of Flanders, which has 6,162,000 inhabitants or 58 percent of the total Belgian population. A face-to-face interview methodology was chosen since this method allows longer interviews and leads to more reliable answers on complicated measurement instruments. A drawback of this interview method is that respondents might be induced to give more socially conform answers. A total of 103 experienced interviewers were given a introductory training session by one of the researchers of the project, and they conducted the interviews at the respondent's home using computer assisted interviewing. During the interviewer training, attention was focused on strategies to reduce the effect of social desirability. The average duration of an interview was on average about an hour.

The survey was designed specifically to analyze the impact of community level characteristics on individual outcomes. To select the respondents, two-stage cluster sampling was used. First, groups of municipalities, differing minimally within and maximally between groups, were identified through cluster analysis. The Flemish region is divided in 308 municipalities, with on average ca. 20,000 inhabitants and a surface of 44 km². This analysis was performed using community level indicators of population density and mobility, industrial production, economic performance and demographic indicators. From the resulting clusters, 40 municipalities were randomly drawn, with their selection chances dependent on their population figure. This procedure was used to ensure sufficient variation of relevant indicators on the community level. In a second phase, a simple random sample of inhabitants living in the selected municipalities, was drawn from the official national registry (including both Belgian citizens and foreign nationals). Overall, the survey obtained a response rate of 54 per cent, which can be considered as average for this kind of research in a Belgian context. A response analysis indicated that respondents are representative for the population, with no significant differences between participants and the population with regard to age and gender. The resulting dataset includes information on 2080 respondents, nested in 40 distinct municipalities. This nested design allows us to test the impact of community level variables on individual outcomes in a methodologically correct manner, with sufficient cases both on the first (individual) and second (community) observation level.

Table 1

Diversity of the friendship network, according to gender and education level.

	Gender		Educational level			All
	Male	Female	Lower secondary	Finished secondary	Higher education	
People with a different religious denomination	45.4	41.3	30.6	43.7	53.7	43.26
People with a different ethnic background	41.3	35.0	28.5	40.2	43.5	38.04
People with a different sexual orientation	43.3	46.1	26.5	49.2	55.8	44.74
People of a different generation (at least 20 years of difference)	55.1	50.6	43.1	53.5	61.1	52.77
People with different political ideas	75.7	69.0	52.3	73.1	88.4	72.26

Source: SCIF 2009.

Note: Entries are percentage of respondents indicating they have friends with different characteristics. *N* = 2051.

2.2. Network diversity

The dependent variable in this analysis is network diversity. We measured the diversity of the respondent's friendship network in terms of religious denomination, ethnic background, sexual orientation, generation and political ideology. Earlier studies have shown that this kind of direct measurement of friendship network diversity might overestimate diversity, but that it is reliable if one wants to analyze structural determinants of friendship networks (Smith, 1999). Furthermore, this question allows for a better measurement of diversity of weak ties, as described earlier. In this survey, the question about friendship network diversity was preceded by a question on the number of close friends, defined as friends with whom one can talk about personal matters. The question used to tap friendship network diversity is similar to the one used in the 2000 Social Capital Community Benchmark Survey in the United States (Putnam, 2007). The exact question wording was: "Think about your friends (and not only your best friends). Do you have a friend . . . ?"

With a different religious orientation?

With a different ethnic background?

With a different sexual orientation?

Of a different generation (at least 20 years of difference)?

With different political ideas?

The respondents were asked to answer with a simple yes or no. Respondents were not asked any additional information on the number of friends with these characteristics, as we do not have any information on the total number of friends included in the network.

To provide an overview of the variation by gender and by educational level in the diversity of friends, the proportion of respondents answering yes on each item is presented in Table 1. It can be noticed that friendship networks in Belgium tend to be quite diverse, at least with regard to some indicators like political ideas. Differences between both genders are rather small, with men usually having a slightly more diverse network, with the exception of sexual orientation, which is in line with the literature on homophobia (Hooghe, 2011). The differences between different education levels are more substantial, with higher educated respondents reporting a more diverse network.

The questionnaire thus includes information on five different kinds of cultural network diversity. For the current analysis only the items most related to cultural diversity in Belgium, namely ethnic and religious diversity, will be taken into account. Ethnic diversity in this regard is mainly interpreted as the presence of nationals from a non-European descent. Religious diversity in the Belgian context can be seen as a closely related measure, since this mainly refers to Islam, a religion that was virtually absent in Belgium until the 1950s. Although ethnic and religious diversity in friendship networks are the least prevalent forms of diversity, the percentages in our study are significantly higher than those reported in other population studies on network diversity, where ten percent of friendship relations is with ethnically different outgroups (Marsden, 1987). This is related to the fact that a different measurement instrument is used, and as such not the proportion of diverse relations on total relations is reported, but the proportion of the sample that has at least one ethnically or religiously different friend in the wider network. It can be assumed therefore that if we would have information about the total network, diversity measures indeed would be lower. In practice, however, it is impossible to collect such comprehensive network measurement in a general population survey.

2.3. Community level variables

The ethnic diversity of local communities is measured using the rate of non-European nationals residing in a municipality per 1000 inhabitants. This measure has been proven to be a valid proxy for the total level of ethnic diversity in a municipality, including foreigners that have acquired Belgian citizenship (Botterman, Hooghe, & Reeskens, in press). Since reliable measures of religious diversity are not available, we will use the proportion of non-European nationals as a measure for

Table 2

Frequencies and descriptive statistics of municipality-level variables.

	Missing	Mean	Std. dev.	Minimum	Maximum
Non European inhabitants/1000 inhabitants (2008)	0	12.77	13.72	1.37	69.60

Source: Directorate General Statistics and Economic Information, Federal Government of Belgium.

Note: N = 40.

Table 3

Frequencies and descriptive statistics of individual-level variables.

Variable	Missing	Mean or percentage	Std. dev.	Minimum	Maximum
Age	0	47.19	17.94	17	84
Gender					
(0 = men; 1 = women)	0	52%	0.50	0	1
Educational level					
Lower secondary	0	28%	0.45	0	1
Secondary education	0	40%	0.49	0	1
Higher education	0	31%	0.46	0	1
Living with partner					
(0 = not living with partner; 1 = living with partner)	0	68%	0.47	0	1
Occupational status					
Employed	2	54%	0.50	0	1
Unemployed	2	13%	0.34	0	1
Student	2	8%	0.43	0	1
Retired	2	25%	0.27	0	1
Nationality parents	4	88%	0.32	0	1
(0 = at least one parent non-Belgian; 1 = Both parents Belgian)					
Religious denomination					
Roman Catholic	0	75%	0.44	0	1
Other Religion	0	6%	0.23	0	1
Not religious	0	19%	0.40	0	1

Source: SCIF Survey 2009.

Note: N = 2080.

community level religious diversity. This is acceptable since, as outlined earlier, ethnic and religious minorities are mainly non-European immigrants and their descendents in the Belgian context.

An overview of the municipality level indicators used is presented in [Table 2](#).

2.4. Individual level variables

Although our main theoretical interest is the influence of the community level, we include a number of control variables on the individual level. As a measure for ethnic origin, we look at the nationality of the parents of the respondent. If at least one parent does not have the Belgian nationality, we consider the respondent as being from a non-Belgian origin. We use this indicator since a significant part of ethnic minority group members in Belgium has acquired Belgian citizenship status. We also include religious denomination. Here we make a distinction between Roman Catholics, non religious respondents and followers of other religions, mainly consisting of Muslims. Furthermore, we control for age, gender, educational level, living with a partner and occupational status. The descriptive statistics of all individual level variables are presented in [Table 3](#).

2.5. Multilevel analysis

As the main research question relates to the impact of geographical context, multilevel methods of analysis are called for. Multilevel analysis, also named hierarchical linear modelling or random effect models, renders it possible to make a distinction between individual level, composition and context effects, by separating the total variance in individual level and higher level variance ([Snijders & Bosker, 1999](#)). Starting from a null model, containing only a constant, we add information step by step, first on the individual level and subsequently on the community level. The null model allows us to assess the level of intra-class correlation. Comparing the model with individual information with the null model informs us how much of the variance on the municipality level can be explained by the composition of that municipality. The final model, containing individual as well as municipality level information tells us which aspect of the context is most important in explaining differences between municipalities, taking into account individual level information. This three steps are followed for the analyses of each item. A likelihood ratio test is used to see if the new model is an improvement in terms of fit in comparison with the last model. To give an indicator of the model fit, McFadden's pseudo R squared measure, based on the log likelihood, is calculated. Note that as we are conducting a multilevel model, and working with dichotomous dependants, R squared measures should be interpreted with caution ([Hosmer & Lemeshow, 2000](#)).

In this analysis the dependent variables, ethnic and religious diversity of the network, are dichotomous, and therefore a logistic model such as logit or probit is preferred. To facilitate interpretation, multilevel probit models are used. Coefficients in probit models have a similar interpretation as OLS regression coefficients: the size of an effect is reflected in the absolute value of a coefficient, with zero indicating no effect. Negative coefficients signify a negative relation between the dependant and the independent, while positive coefficients illustrate a positive association.

3. Analysis and results

Table 4 lists the results of the analysis. In order to facilitate the comparison between ethnic and religious diversity in friendship networks can be more easily examined, each step of the multilevel analysis is presented side by side. In the first, so-called null model, it can be observed that both for ethnic and religious network diversity, slightly less than eight percent of the total variance can be attributed to the community level. This indicates that characteristics of the community one lives in are related to the composition of friendship network. This confirms that we indeed need a multilevel analysis to arrive at reliable results. While at first sight eight per cent might not be that impressive, it does suggest that there is at least some effect of the community on the composition of friendship networks.

Model I includes the individual level variables, and this allows us to explain almost half of the variation on the community level. This means that a substantial part of the variation on this level is due to the composition of each community, as not every community has the same composition with regard these background characteristics. Individual level information already explains nine percent of the total variance. In Model I it can be observed that for both ethnic and religious diversity educational level and religious affiliation play an important role. Higher education is associated with more diverse networks, and adhering to a different religion than the dominant one, or not being religious at all, increases the probability of a diverse network. Members of ethnic minorities have more diverse networks, since they are more likely to encounter members of the majority group. Students tend to have more diverse networks than employed, unemployed or retired respondents. An important point of difference between the two forms of cultural diversity is that the friendship network of older or female respondents tends to be less ethnically diverse, while age and gender do not play a role for religious diversity. The relation does, however, run in the same direction but it fails to reach significance. Most of these individual level relations confirm the results of earlier research.

In Model II, we add the proportion of non European-inhabitants in a community. This variable explains most of the remaining variation on the community level. So individual network diversity is not only explained by individual characteristics and compositional effects, but also by context effects on the municipality level. This means that apart from what we could expect based on the individual characteristics of the inhabitants, there is an additional effect of living in a diverse community. These results confirm our first hypothesis that there is more diversity in friendship networks in more heterogeneous communities. Despite the trend towards homophily, the presence of ethnic minorities within one's communities therefore is associated with higher levels of intercultural friendships. Furthermore it can be observed that the coefficients for ethnic and religious diversity are almost identical, lending support to our assumption that in contemporary Western European societies, religious diversity is indeed closely related to ethnic diversity.

4. Discussion

The aim of this study was to provide insights on the community level determinants of cultural diversity in wider friendship networks. We departed from the notion that not only personal preferences, but also contextual constraints influence the structure of personal social networks. First stated by Blau (1977), this hypothesis received confirmation throughout this study. A first confirmation comes from the substantially higher degree of cultural diversity in the networks of descendants of non-Belgians. Since these respondents belong to an ethnic minority group, they are very likely to have friends with a different ethnic background. The same argument is valid for other smaller groups, such as those having a different religious denomination. The substantial composition effect provides a second indicator for the choice-constraint approach: a significant part of the variation on the context level can be explained by including information about the composition of the sample in every municipality. The higher level of friendship diversity can be partly explained by the presence of more respondents who adhere to a different or no religion, or of whom the parents are not of Belgian descent. A third way in which the main hypothesis is confirmed is by the association of diversity on the context level with the diversity of the friendship network. In municipalities with a strong ethnic diversity, respondents report more diverse friendship networks than we can expect based on individual information. While previous research indicates clearly that homophily occurs in friendship networks, the current study to some extent counterbalances this finding. Despite the tendency towards homophily, it is clear that the 'supply' of diversity in one's geographical context influences the diversity in one's friendship network. As a limitation it has to be noted that, as this study was based on cross-sectional and not longitudinal data, it is possible that the causal pathway runs in the opposite way: people with more diverse networks, or more open to diverse contacts, live in more diverse cities. In this case, diverse friendship networks are not formed due to more opportunities for intergroup contact, but individuals with culturally diverse networks choose to live in more heterogeneous communities.

On the individual level, as expected, higher educated, students, those who adhere to no religion or to a minority denomination, and respondents from a non-Belgian descent have more diverse networks. While most associations found were similar for ethnic and cultural diversity, men and younger respondents had slightly more ethnically diverse networks than

Table 4
Multilevel analysis of ethnic and religious diversity of the friendship network.

		Model 0		Model I		Model II	
		Ethnic diversity <i>B</i> (SE) sig.	Religious diversity <i>B</i> (SE) sig.	Ethnic diversity <i>B</i> (SE) sig.	Religious diversity <i>B</i> (SE) sig.	Ethnic diversity <i>B</i> (SE) sig.	Religious diversity <i>B</i> (SE) sig.
Individual level	Constant	–.348 (.055)***	–.202 (.055)***	.842 (.169)***	.511 (.170)***	1.807 (.217)***	1.517 (.213)***
	Gender (Ref. male)			–.167 (.061)**	–.111 (.060) ns	–.167 (.061)**	–.110 (.060) ns
	Age (in years)			–.014 (.003)***	–.006 (.003) ns	–.014 (.003)***	–.006 (.003) ns
	Educational level (Ref. finished secondary)						
	Lower secondary education			–.205 (.079)**	–.318 (.078)***	–.197 (.079)*	–.310 (.078)***
	Higher education			.173 (.071)*	.344 (.071)***	.179 (.071)*	.333 (.070)***
	Living with partner (Ref.: No)			–.114 (.070) ns	–.122 (.070) ns	–.112 (.070) ns	–.113 (.069) ns
	Occupational Status (Ref.: employed)						
	Student			.272 (.136)*	.355 (.137)**	.276 (.135)*	.352 (.136)*
	Retired			–.012 (.111) ns	–.031 (.110) ns	–.016 (.111) ns	–.044 (.109) ns
	Unemployed			.023 (.100) ns	.034 (.100) ns	.011 (.100) ns	.023 (.099) ns
	Religious affiliation (Ref.: Roman Catholic)						
	Other religion			.696 (.151)***	.954 (.163)***	.635 (.150)***	.891 (.161)***
	No religion			.213 (.095)*	.391 (.095)***	.193 (.094)*	.374 (.094)***
	Parents Belgian Nationality (Ref. No)			–.547 (.103)***	–.509 (.105)***	–.504 (.102)***	–.469 (.104)***
	Non European inhabitants/1000 inhabitants (2008) (ln)					.209 (.032)***	.218 (.031)***
Community level	ICC	.077	.078	.044	.043	.003	.002
	Log likelihood	–1347.349	–1371.332	–1219.278	–1247.847	–1204.723	–1232.128
	Likelihood ratio test	–	–	256.14***	246.97***	29.11***	31.44***
	Pseudo- <i>R</i> ²	0	0	.0951	.0900	.1059	.1015

Note: *N* = 2070 (ethnic diversity) *N* = 2051 (religious diversity), data: SCIF-survey 2009. Entries are the results of a random intercept multilevel probit regression model, using the probit command in Stata (Rabe-Hesketh & Skrondal, 2005).

ns: $p \geq .05$

* $p < .05$.

** $p < .01$.

*** $p < .001$.

women, while gender and age did not have an influence on religious diversity. An obvious remark is that the clearly more diverse networks of students, controlling for educational level and age, illustrates a possible danger in generalising findings based on university student or school pupil samples to the general population.

The context level under investigation in this study was the community of residence. Although the variation on this level of friendship network diversity was limited, it was not negligible. In addition a relatively low threshold for diversity, having at least one friend with a different ethnic or religious background, was investigated. Also weak friendship ties were investigated, and these are expected to be both less influenced by local proximity and less homogenous (Granovetter, 1983). Therefore it is nonetheless remarkable that in times of globalisation, in a densely populated and small region such as Flanders, local communities still play a significant role in the development of weak friendship ties. Although the effect of the community level remained rather limited, with a total intra class correlation of slightly less than eight per cent, it has to be noticed that diverse communities are associated with at least some form of diversity in friendship networks. It is recommended that in future research, more attention is paid to the gradient between baseline homophily and inbreeding homophily, which could not be done in this study due to the measurement instrument used. More detailed investigation of the network diversity of minority respondents could also yield substantial insights, which was not possible in this study due to sample constraints.

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