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Ethnic Residential Segregation, Social Contacts, and Anti-Minority Attitudes in European Societies

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Ethnic residential segregation has long been viewed as a major structural mechanism through which ethnic and racial minorities are denied equal access to opportunities, rewards, and amenities. Residential segregation also decreases opportunities for establishment and development of social ties and contacts between members of ethnic minorities and members of the majority population. This article examines the complex inter-relations between ethnic residential segregation, inter-ethnic social contacts and attitudes toward minorities within the context of European societies. It specifically examines the following hypotheses: first, ethnic residential segregation (i.e. residence in homogeneous all-European neighbourhoods) restricts opportunities for establishment and development of inter-ethnic social contacts; second, positive inter-ethnic contacts are likely to reduce anti-minority attitudes (i.e. perception of threat and social distance); and third, contact mediates the relations between the ethnic composition of neighbourhood of residence and anti-minority attitudes. Using data from the 2003 European Social Survey for 21 European countries a series of multi-level regression models are estimated to examine the hypotheses within a cross-national comparative framework. Although the findings generally support the theoretical expectations, they also underscore the complex ways in which patterns of ethnic residential segregation affect attitudes toward minority populations through inter-ethnic contacts. Explanations for the findings are offered and discussed in light of the theoretical expectations presented at the outset of this article.

Introduction

Ethnic residential segregation has long been viewed by social scientists as a major aspect of urban inequality and as a structural mechanism through which ethnic and racial minorities are denied equal access to opportunities, rewards, and amenities. In the United States, for example, researchers have long demonstrated that blacks, Hispanics, and whites rarely live in the same neighbourhoods (e.g. Denton and Massey, 1988; Farely and Frey, 1994; Clark, 2002; Charles, 2003). Rather, members of ethnic and racial minorities tend to live in segregated, homogeneous and distinct neighbourhoods and communities. More specifically, while subordinate ethnic groups and racial minorities tend to reside in the poorer inner-city neighbourhoods, members of the majority population tend to reside in the affluent and prestigious neighbourhoods of the metropolitan area.

Residential segregation has significant consequences for differential opportunities for quality of life and for standard of living including opportunities for attainment of quality education, exposure to crime, differential access to social services, medical facilities, and cultural amenities (e.g. Peterson and Krivo, 1993; Poledank, 1993; Hart *et al*., 1998; Collins and Williams, 1999). Residential segregation has also significant consequences for development of inter-ethnic interactions, ties and contacts. Specifically, while spatial ethnic segregation reduces opportunities for interaction between members of minority group populations and members of the majority group population, residence in integrated-mixed communities is likely to enhance opportunities for inter-ethnic contacts and inter-ethnic relations. According to contact theory, lack of inter-ethnic contacts is likely to preserve prejudicial views toward out-group populations while prevalence of positive inter-ethnic contacts is likely to decrease prejudice, hostility, and social distance (e.g. Allport, 1954; Pettigrew, 1998).

Patterns of ethnic residential segregation, inter-ethnic contacts and prejudice have been studied extensively for quite a long time. Consequently, the body of research on these topics has grown and has become substantial. Nevertheless, no-one has systematically examined yet the inter-relations between ethnic segregation, contact, and prejudice. That is, no-one has examined whether, to what extent, and in what ways inter-ethnic contacts mediate the relations between residential segregation and ethnic prejudice. This neglect is curious and somewhat unfortunate because the logic embodied in sociological writings on these issues leads us to expect that inter-ethnic contacts would mediate the relations between residential segregation and prejudice.

Thus, and in order to examine this theoretical expectation, we utilize in this article data from 21 European countries to examine, for the first time, the social mechanisms underlying the complex relations between residential segregation, inter-ethnic contacts, and ethnic prejudice. More specifically, in what follows we ask whether and to what extent Europeans residing in all-European neighbourhoods are less likely to develop inter-ethnic contacts than Europeans residing in mixed or in ethnic neighbourhoods, whether positive inter-ethnic contacts are likely to decrease prejudice, and whether inter-ethnic contacts are likely to mediate the relations between residential segregation and prejudice. By so doing we will be in a position to contribute to a better understanding of the social and structural conditions that shape inter-ethnic relations, prejudice and social distance in European societies.

Previous Theory and Research

Ethnic residential segregation is viewed as a major structural feature of most major urban–metropolitan centres in Western societies. Throughout the 20th century, urban sociologists have repeatedly observed consistent and high levels of residential segregation between blacks and whites in American cities and somewhat lower levels of segregation, yet quite substantial, between whites and Hispanics, and between whites and Asians (e.g. Denton and Massey, 1988; Clark, 2002). The high levels of ethnic residential segregation that were observed several decades ago in American cities have not declined over the years and still prevail in contemporary America (e.g. Emerson *et al*., 2001; Charles, 2003). The persisting and consistent high levels of ethnic residential segregation in American cities are often attributed to three main complementary explanations: economics, discrimination, and preferences.

The economic explanation contends that subordinate ethnic minorities (especially blacks) do not share the same neighbourhoods with whites because they lack the necessary economic means and resources to live in neighbourhoods where whites reside. Although the economic explanation had not received wide and firm support by researchers, it cannot be readily dismissed (e.g. Massey and Fischer, 1999; Darden and Kamel, 2000). The second explanation focuses on discriminatory practices in the housing market that were used to deny minorities (especially blacks) from equal access to quality residence in white neighbourhoods (e.g. Yinger, 1995; Goering and Wienk, 1996; Ross and Yinger, 2002; Turner *et al*., 2002). The third explanation centres on residential preferences. Studies that examine residential preferences uniformly contend that most whites are reluctant to live in neighbourhoods where blacks live, and to a lesser extent, where Hispanics and Asians reside (e.g. Clark, 1992, 2002; Farley *et al*., 1994; Charles, 2000; Krysan, 2002; Krysan and Farley, 2002).

Residential segregation as well as its causes and consequences, have been studied in the context of American society extensively and for many decades. Residential segregation in European cities, however, is a relatively recent phenomenon, hence, a new research topic. In other words, since immigrants have begun arriving in Western Europe in large numbers only during the second half of the 20th century, social scientists have begun devoting attention to the study of ethnic residential segregation in European cities only in recent years (e.g. Peach, 1996, 1998, 2005; Musterd *et al*., 1998; Musterd, 2005; Logan, 2006; Musterd and

De Vos, 2007). These studies result in a four-fold conclusion: first, despite being relatively a recent phenomenon, residential segregation is substantial and wide-spread across European cities; second, patterns of ethnic residential segregation in Europe are quite similar to those observed in the United States; third, the rate of ethnic residential segregation between Europeans and ethnic immigrants, although substantial, are not as high as those between whites and blacks in the United States; they are much more similar to segregation rates observed between whites and Hispanics; and fourth, for the most part, rates of residential ethnic segregation in European cities have been increasing over the years.

Indeed, the dramatic influx of ethnic immigrants, foreign workers, ex-colonials, and refugees to Europe throughout the second-half of the 20th century has not only changed the ethnic composition of many European countries but also altered the ethnic fabric of most European cities. Metropolitan centres like London, Amsterdam, Frankfurt, Athens, Brussels, Paris, Lisbon, and Stockholm, just to name a few, are currently characterized by homogeneous and distinct ethnic neighbourhoods (Van Kempen and Van Weesep, 1997; Musterd *et al.*, 1998; Peach, 1998, 2005; Hatziprokopiou, 2003; Malheiros and Vala, 2004; Musterd, 2005; Karsten *et al.*, 2006; Logan, 2006; Musterd and De Vos, 2007). For example, London has ethnically distinct–segregated neighbourhoods populated mostly by Pakistani, Bangladeshi, or Indian residents; Amsterdam has neighbourhoods inhabited by Surinamese and Moroccan; Athens has Albanian residential areas; Frankfurt has several Turkish neighbourhoods; and Paris and Brussels are characterized by a series districts and neighbourhoods inhabited mostly by immigrants of North-African origin[1].

The growing body of research on patterns of residential segregation in European cities demonstrates that spatial segregation is associated with socio-economic status of the residents. That is, racial and ethnic minorities tend to reside in the poorer neighbourhoods of the inner city while members of the majority population tend to live in affluent and prestigious neighbourhoods. Since individuals possess a 'cognitive map' of communities and neighbourhoods and since individuals organize city-neighbourhoods on hierarchical scale of desirability according to their social status and ethnic composition, ethnic neighbourhoods have become less desirable, if not an undesirable place of residence. In other words, most members of the majority population do not want to live in places where ethnic and racial minorities reside; they prefer to reside in neighbourhoods where only Europeans live (Semyonov *et al.*, 2007)[2].

In what follows, we contend that spatial ethnic segregation can influence inter-ethnic relations and, thus, be a cause of prejudicial views toward ethnic minorities. The impact of residential segregation on discriminatory attitudes may occur mainly because spatial segregation is likely to decrease opportunities for inter-ethnic contacts. Limited inter-ethnic contacts, in turn, are conducive, according to contact theory, to emergence of prejudicial views and to preservation of social distance between members of the majority population and members of subordinate ethnic minorities (Allport, 1954; Pettigrew, 1998; Pettigrew and Tropp, 2006).

Contact theory, as originally advanced by Allport (1954), suggests that inter-group contact is an efficient means to reduce prejudice and ethnic conflict. It was further suggested (Pettigrew, 1998; Pettigrew and Tropp, 2006) that when individuals belonging to different ethnic origins establish personal contacts that are qualitatively different from a short-term acquaintance, prejudice is likely to decrease, especially when such contacts are 'positive', 'constructive', and have 'friendship potential'. Whereas increase in the relative size of the minority population is likely to increase the odds that two random individuals from two different ethnic groups would establish 'positive' and 'constructive' contacts (Wagner *et al.*, 2006), spatial segregation across different and distinct ethnic neighbourhoods is likely to decrease the odds for building positive contacts.

Regardless of the structural social conditions that shape the scope and quality of inter-ethnic contacts, researchers demonstrate, rather clearly and quite convincingly, that inter-ethnic contacts are likely to decrease negative attitudes, prejudice, perceptions of threat and sense of social distance among members of the majority population (e.g. Pettigrew, 1998; McLaren, 2003; Pettigrew and Tropp, 2006; Wagner *et al.*, 2006; Schneider, 2008). Indeed, according to contact theory, positive inter-ethnic contacts are likely to decrease prejudicial views toward ethnic minorities[3].

Prejudice, xenophobia, and anti-foreigner sentiment are not only influenced by inter-ethnic contacts but also by socio-demographic attributes of individuals as well as structural–contextual characteristics of their societies. Generally speaking, studies that examined individuals' attitudes toward ethnic minorities either within single countries or across countries have consistently observed that prejudice and discriminatory attitudes tend to be more pronounced among

individuals with low socio-economic status (e.g. low education, low income, unemployed) and among older persons and those holding conservative ideologies (e.g. religious, right-wing political orientation) (e.g. Case *et al.*, 1989; Quillian, 1995; Espenshade and Hempstead, 1996; Esses *et al.*, 2001; Scheeper *et al.*, 2002; Kunovich, 2004; Raijman and Semyonov, 2004; Semyonov *et al.*, 2004). Prejudice is higher among the first group of people because socio-economically weak and vulnerable persons are more threatened by the direct competition generated by members of subordinate minority populations. Fear of competition, in turn, is likely to increase prejudice and negative sentiments. Among the second group of persons prejudice is higher because older persons and individuals holding conservative ideologies tend to fear and resist changes that out-group populations may introduce to society.

Researchers that examined country-level effects on prejudice and discriminatory attitudes toward out-group populations operate under the premise that prejudicial views also increase with structural sources of competitive threat. More specifically, prejudice is expected to rise with increase in the proportion of the minority population and with declining economic conditions (e.g. Quillian, 1995; Scheeper *et al.*, 2002; Semyonov *et al.*, 2006). An increase in the relative size of the minority population and decline in economic prosperity are likely to be viewed by members of the majority population as a rise in potential competition over scarce social and economic resources. Increased competition over resources and rewards, in turn, is likely to increase hostility and negative feelings toward out-group populations (Quillian, 1995; Scheepers *et al.*, 2002; Gjsbert *et al.*, 2004; Kunovich, 2004; Semyonov *et al.*, 2006).

Indeed, the body of research presented here strongly supports the argument that negative attitudes toward out-group populations are likely to be prompted not only by socio-economic vulnerability at the individual-level but also by structural sources of competitive threat at the country-level. In what follows, thus, when examining the ways inter-ethnic contacts mediate the relations between residential segregation and prejudice we take into consideration the roles played both by individual-level socio-economic attributes and country-level sources of competitive threat.

Data Source and Variables

Data for the present study were obtained for 21[4] countries from the 2003 European Social survey (ESS). Data were collected for national representative samples (age 15 and older) through face to face interviews that were conducted in respondents' homes. The 2003 ESS provides, in addition to socio-demographic attributes of respondents, information about the ethnic composition of the neighbourhoods in which respondents reside as well as information on friendship contacts with members of ethnic minorities. The ESS also provides data on a series of measured items that pertain to both prejudicial views and social distance. The analysis reported here was restricted to European citizens who are members of the majority population. This procedure yielded a sample of 35,948 persons[5]. The detailed distribution of the sample size for the 21 countries is provided in Table 2.

Patterns of ethnic residential segregation are captured by a self-reported definition of the ethnic composition of one's neighbourhood of residence. A distinction is made between three types of neighbourhoods according to their ethnic composition: places without non-European residents (hereafter homogeneous all-European neighbourhoods), neighbourhoods where some residents are of non-European ethnic origin (hereafter mixed neighbourhoods), and neighbourhoods where most residents are of non-European origin (hereafter ethnic neighbourhoods). The socio-demographic attributes of individuals that are used in the analysis as individual-level predictors of contact, prejudice and social-distance include: age (in years), gender (man = 1), marital status (married = 1), education (years of formal schooling), household income (12 ordinal categories of income per capita), employment status (three dummy variables distinguishing among unemployed, employed and out of the labour force), political orientation (10 categories from left to right), and urban–rural distinction (rural = 1).

Inter-ethnic contact is used in the analysis, once, as dependent variable, and once, as an intervening variable. It is defined by the distinction between respondents that have immigrant friends and those that do not have immigrant friends (value 1 was assigned to the first category while 0 was assigned to the second category). The choice to focus on friendship as an indicator of contacts stems from our belief that friendship is a voluntary behavior representing a positive experience with members of the out-group population. Thus, it better captures the theoretical concept 'positive contact' than contact with colleagues[6].

Two variables—social distance and perception of threat—are utilized in the analysis as dependent variables. Although the two are inter-related, each captures a different aspect of attitudes toward out-group populations[7]. 'Social Distance' is constructed

with two measured indicators on scales ranging from 0 to 10. These two indicators (willingness to have an immigrant from a different race or ethnicity as a family member and willingness to have an immigrant from a different race or ethnicity as a boss) have long been used as measures of social distances. 'Perception of Threat' is measured by respondents' perceptions of threat posed by foreigners in the following domains: jobs, the economy, health and welfare, cultural life, crime, and overall life. The six items are measured on a scale ranging from 0 to 10 and are used to construct the index 'Perception of Threat'. [See also Schneider (2008) and Semyonov *et al.* (2008) for similar measures.] An exploratory factor analysis reveals that the two indices—'social distance' and 'perception of threat'—pertain to two distinct concepts.[8] The detailed definition of the variables used in the analysis and their mean value and standard deviation are provided in Table 1.

The country-level contextual variables that were selected to represent structural sources of competitive threat are size of the non-European population and economic conditions. Size of the non-European population residing in the country was obtained from the publications of the Eurostat for the years 2000 and 2001 and economic conditions were equated with Gross Domestic Product (GDP) per capita (averaged for the years 2000-2002). Per cent non-European is considered a better measure than per cent all foreigners,[9] and GDP is considered a better proxy of economic conditions than GNP or unemployment rate because it is estimated using the 'purchasing power parity method' which takes into account variations in standard of living and cost of living across countries. Both variables were repeatedly used in previous studies of anti-foreigner sentiment and prejudice (e.g. Quillian, 1995; Scheepers *et al.*, 2002; Kunovich, 2004; Semyonov *et al.*, 2006). The distributions of these two country level variables are provided in Table 2.

Analysis and Findings

In Table 2 we present characteristics of the 21 countries included in the study for a descriptive cross-national overview. Column 1 displays per cent distribution of residents living in homogeneous neighbourhoods (neighbourhoods without non-Europeans). Column 2 lists per cent of persons reporting as having friendship contacts with ethnic minorities, column 3 displays mean values of the 'perception of threat index' and column 4 includes mean values for the 'social distance' index. Columns 5 and 6, respectively, display per cent non-European foreigners residing in the country and GDP per capita and column 7 lists the number of sample cases for each country.

The data in Table 2 show that reported ethnic residential segregation is quite high in most European countries (i.e. most Europeans report living in homogeneous all-European neighbourhoods).[10] In Poland, 84 per cent of the interviewees indicate that they live in areas where there are no residents of another ethnic or racial origin. Residence in homogeneous all-European neighbourhoods (i.e. areas without inhabitants of non-European origin) is also quite high (over 60 per cent) in Belgium and in Finland, Denmark, Hungary, and Sweden. The lowest level of residential segregation is reported in Greece, where almost 20 per cent indicate living in an area with no ethnic minorities. In most other countries, per cent of interviewees reporting living in homogeneous all-European neighbourhood (areas populated exclusively by Europeans) ranges between 40 and 60 per cent.

The data also reveal considerable variation in inter-ethnic contact across countries. Contacts are rare in Poland, Greece, and Hungary (where under 30 per cent of the population reported having members of non-European ethnic groups as friends) but quite frequent in Luxembourg and Switzerland (where over 70 per cent of the respondents reported having non-European as friends). In Norway, Germany, and Austria about half of the interviewees reported having inter-ethnic friendship contacts.

Table 2 also shows considerable cross-country variations in attitudes citizens express toward out-group populations—ethnic minorities. The most negative attitudes (measured on the 'perception of threat index') are expressed by Greek citizens (7.1), followed by citizens of Hungary and the Czech Republic. The least negative prejudicial views (even slightly positive) are expressed in Sweden (4.5), followed by Luxembourg and Finland. In all other countries perceptions of threat toward ethnic minorities were negative ranging between 5.4 and 5.7. Social Distance is most evident in Greece, Belgium, and the Czech Republic and least pronounced in Austria, Luxembourg, Spain, and Portugal.

Countries do not differ only in rates of residential segregation, inter-ethnic contacts, perception of threat, and social distance but also in other characteristics such as size of the non-European population residing in the country and GDP per capita, as well as by the socio-demographic composition of their residents. Therefore, it is essential to examine cross-national variations in inter-ethnic contacts and in prejudicial views while taking into account variations in both

Table 1 Definition, per cent or mean (standard deviation) of the individual-level and country-level variables included in the analysis

Variables	Definition	Mean (SD)
Individual-level variables ($n = 35{,}948$ persons)		
Gender	Men = 1	47.7%
Marital status	Married = 1	57.7%
Age	In years	46.65 (18.15)
Type of locality	Rural = 1	35.7%
Education	In years	11.80 (4.12)
Left-right political orientation	'Where would you place yourself on this scale' Measured on scale: 0 = left, 10 = right	4.91 (2.14)
Monthly income per capita	In EURO: means of 12 categories of household income were standardized by number of persons in household. The categories were created for each country in euro.	846.43 (835.93)
Employed	Economically active = 1	48.5%
Not in labour forces	Not in the labour forces = 1	45.9%
Unemployed	Unemployed = 1	5.5%
Type of current living area:	How would you describe the area where you currently live?	45.9%
Neighbourhood where almost nobody are of different ethnic origin		
Neighbourhood where some residents are of different ethnic origin	An area where *almost nobody* is of a different race or ethnic group from most [country] people = 1	40.7%
	Some people are of a different race or ethnic group from most [country] people = 1	11.3%
Neighbourhood where most residents are of different ethnic origin	*Many people* are of a different race or ethnic group = 1	
Positive contact	1 = having friends who come to live here from another country	44.8%
Social distance	Mean score of two 0–10 scale items Now thinking of people who have come to live in (country) from another country who are of a different race or ethnic group from most (country) people. How much would you mind or not mind if someone like this married a close relative of yours? Now thinking of people who have come to live in (country) from another country who are of a different race or ethnic group from most (country) people. How much would you mind or not mind if someone like this will be your boss? 0 = not mind at all, 10 = mind a lot	3.32 (3.05)

(continued)

socio-demographic characteristics of individuals and structural characteristics of the countries. Thus, in the analysis that follows we estimate a series of regression models and hierarchical linear models predicting, respectively, inter-ethnic contacts (Table 3), perception of threat and social distance (Table 4) as a function of residential segregation, socio-demographic attributes of individuals and characteristics of the countries.

In Table 3 we report estimated coefficients of hierarchical linear regression models predicting (log) odds for developing positive contacts (friendship) with members of ethnic minorities as a function of neighbourhood of residence (defined by ethnic composition of place of residence) and socio-demographic characteristics (i.e. age, gender, education, income, rural-urban distinction, political orientation, and

Table 1 Continued

Variables	Definition	Mean (SD)
Perceptions of threat	Mean score of six 0–10 scale items: 'Would you say that people who come to live here generally take jobs away from workers in [country], or generally help to create new jobs?' 'Most people who come to live here work and pay taxes. They also use health and welfare services. On balance, do you think people who come here take out more than they put in or put in more than they take out?' 'Would you say it is generally bad or good for [country]'s economy that people come to live here from other countries?' 'Would you say that [country]'s cultural life is generally undermined or enriched by people coming to live here from other countries' 'Is [country] made a worse or a better place to live by people coming to live here from other countries?' 'Are [country]'s crime problems made worse or better by people coming to live here from other countries?' 0 = positive, 10 = negative	5.50 (1.66)
Country-level variables ($n = 21$ countries)		
Size of minority[a]	Mean of per centage of Non EUR foreigners in 2000 and 2001	3.21 (2.47)
GDP per capita[b]	RGDPL: Real gross domestic product per capita (constant price: Laspeyers), unit $, Mean of 2000, 2001, and 2002	21,544.05 (11,002.08)

[a]*Sources: Eurostat: Yearbook 2003; Living conditions in Europe – Statistical pocketbook. Data 1998–2002. 2003 edition; Demographic statistic 2002. OESD: 'Trends in international migration', 2001, 2002.*

[b]*Source: A. Heston, R. Summers and B. Aten, Penn World Table Version 6.1, Center for International Comparisons at the University of Pennsylvania (CICUP), 2002.*

employment status) measured at the individual level and the size of the non-European population and GDP per capita measured at the country-level. Equation 1 estimates the impact of type of neighbourhood (introduced as dummy variables) on odds of having friendship contact with individuals belonging to ethnic minorities. In equation 2, the socio-demographic characteristics of the individuals are introduced as control variables and in equation 3, size of the non-European population and GDP are included as two country-level predictors of social contact.

The findings displayed in Table 3 lend firm support to the expectation that residents of all-European neighbourhoods have lower opportunities to establish inter-ethnic contacts than Europeans who reside either in mixed neighbourhoods or in ethnic neighbourhoods. Specifically, the coefficients in equation 1 suggest that odds of developing inter-ethnic friendship relations are considerably lower for residents of all-European neighbourhoods than residents of mixed neighbourhoods ($b = 0.634$) or residents of ethnic neighbourhoods ($b = 0.780$). In other words, when compared to residents of all-European neighbourhoods, relative odds to develop friendship with members of ethnic minorities are 1.88 and 2.18, respectively, higher for residents of mixed neighbourhoods and for residents of ethnic neighbourhoods. When the individual-level variables are added to equation 2 and when the country-level variables are also included in equation 3, the relative odds having inter-ethnic friendship for residents of homogeneous all-European neighbourhoods hardly change and remain significantly lower when compared either to European residents of areas with 'some ethnic minorities' or residents of areas where 'most are ethnic minorities'. The data displayed by equations 2 and 3 also suggest that odds for inter-ethnic contacts tend to rise with education and income and to decline with age and right-wing political orientation. The odds for positive contacts are higher among men and lower among rural people.

The analysis at the country level does not provide support to the expectation that opportunities for inter-ethnic contact increase with the relative size of the minority population (as evident by the insignificant effect of size of the non-European population

Table 2 Descriptive statistics (per cent or mean) of the country-level characteristics

Country	Per cent who report residing in homogeneous all European area	Friendship contacts	Perception of Threat index	Social distance index	Per cent non-European foreigners	GDP per capita	*N*
Austria	46.8	52.2	5.25 (1.73)	1.92 (2.57)	8.40	24,255.63	2,154
Belgium	63.1	44.8	5.72 (1.52)	4.07 (3.15)	2.85	22,702.50	1,803
Czech Republic	44.1	31.2	6.20 (1.61)	4.41 (3.08)	2.10	5,804.81	1,354
Denmark	63.7	46.1	5.19 (1.61)	3.30 (3.16)	3.85	30,521.48	1,464
Finland	67.2	41.6	4.96 (1.44)	3.28 (2.84)	1.40	23,972.00	1,969
France	29.9	67.6	5.40 (1.88)	3.28 (3.25)	3.50	22,861.83	1,439
Germany	37.6	51.3	5.52 (1.57)	3.08 (2.92)	6.65	23,104.06	2,774
Greece	19.5	28.4	7.09 (1.81)	5.06 (3.61)	6.50	11,389.25	2,429
Hungary	65.0	28.8	6.23 (1.67)	3.57 (3.30)	0.63	5,408.65	1,682
Ireland	59.1	41.7	5.40 (1.70)	3.42 (3.10)	1.15	27,450.81	1,978
Italy	36.5	35.3	5.30 (1.50)	3.83 (2.96)	2.10	19,359	1,203
Luxemburg	50.4	77.5	4.84 (1.61)	2.34 (3.23)	5.10	45,698.30	1,023
Netherlands	58.0	42.6	5.40 (1.37)	3.19 (2.73)	2.90	24,377.10	2,319
Norway	55.6	51.5	5.21 (1.37)	3.76 (2.89)	2.30	38,919.43	1,982
Poland	84.1	21.0	5.53 (1.60)	3.28 (3.19)	0.10	4,645.65	2,110
Portugal	52.8	40.2	5.68 (1.67)	2.96 (3.10)	1.20	11,007.12	1,476
Slovenia	52.0	52.9	5.67 (1.48)	3.70 (3.14)	2.20	10,197.20	1,514
Spain	39.4	37.7	5.27 (1.49)	2.90 (2.94)	1.75	14,712.4	1,684
Sweden	64.0	67.6	4.51 (1.57)	2.15 (2.63)	3.40	26,211.78	1,941
Switzerland	36.0	74.8	5.22 (1.36)	2.60 (2.66)	8.30	34,709.25	1,828
UK	49.2	44.6	5.69 (1.73)	3.30 (2.90)	2.75	25,026.03	1,994

Source: ESS, 2002.

on contact in equation 3). The data suggest, however, that odds for inter-ethnic contacts are likely to increase with economic prosperity (as evident by the positive and significant effect of GDP on contact in equation 3).

In Table 4, we examine whether and to what extent patterns of ethnic residential segregation affect attitudes toward ethnic minorities and whether positive contact intervenes in the relations between segregation and attitudes toward ethnic minorities. Thus, we estimate a series of HLM regression equations predicting, respectively, 'perception of threat' (equations 1–5) and 'social distance' (equations 1a–5a). In equations 1 and 1a, we let the dependent variable (i.e. 'perception of threat' or 'social distance') be a function of the measure of neighbourhood (i.e. ethnic composition of neighbourhood) plus socio-demographic attributes (at the individual-level). In equations 2 and 2a, we add 'positive contact' to the set of individual-level predictors to examine the extent to which contact intervenes between segregation and attitudes toward minorities. In equations 3 and 3a, we also include an interaction between the type of neighbourhood and contact. In equations 4 and 4a, we introduce two country-level variables to the set of predictors (size of the non-European population and GDP per capita) and in equations 5 and 5a, we also include an interaction term between size of the minority population and contact.[11] The first interaction term (equations 3, 3a, 4 and 4a) enables us to examine whether inter-ethnic contact differentially affects negative attitudes toward ethnic minorities in different contexts of neighbourhoods. The second interaction term (equations 5 and 5a) enables us to examine whether the effect of contact on attitudes changes with size of the non-European population.

With only a few exceptions, the findings for the individual level analysis are quite similar for the two dependent variables ('perception of threat' and 'social distance') and for the most part, lead to similar conclusions. The coefficients in all equations suggest that anti-minority attitudes are likely to decline with education and income and to increase with right-wing political orientation. Negative attitudes are more pronounced among the unemployed and among persons living in rural places. Although men and women do not differ in their perception of threat, men score significantly higher than women on the social distance index.

Table 3 Coefficients (S.E.) of logistic regression predicting odds for establishment of positive contacts with members of ethnic minorities[a]

Variables	Model 1	Model 2	Model 3
Intercept	−0.356* (0.029)	−0.425* (0.091)	−0.486* (0.124)
Individual-level variables[b]			
Current neighbourhood[c]			
Mixed neighbourhood	0.634* (0.025)	0.501* (0.028)	0.508* (0.030)
Ethnic neighbourhood	0.780* (0.038)	0.628* (0.044)	0.580* (0.039)
Gender	–	0.140* (0.025)	0.134* (0.031)
Marriage status	–	0.035 (0.028)	−0.018 (0.047)
Age	–	−0.023* (0.001)	−0.022* (0.002)
Education	–	0.084* (0.004)	0.083* (0.008)
Income per capita	–	0.001* (0.000)	0.001* (0.000)
Working status[d]	–		
not in the labour market	–	0.105 (0.058)	0.119 (0.089)
Employed	–	0.133* (0.057)	0.151 (0.084)
Political orientation	–	−0.044* (0.006)	−0.040* (0.011)
Rural	–	−0.136* (0.028)	−0.191* (0.036)
Country level variables[e]			
Per cent of foreigners	–	–	0.036 (0.042)
GDP × 100	–	–	0.003* (0.001)
Country-level random effects—u_0	–	–	0.23289

Source: ESS, 2002.

[a]*Model 1 and Model 2 present coefficients of logistic regression equations predicting odds for developing positive contacts with minorities by individual-level variables and with control for 21 countries as dummy variables (the coefficients are not presented).*

[b]*All the slopes of individual-level variables are constrained to be identical across 21 countries. Education, political orientation, age and income have been centred around their grand means. The dummy variables are un-centered.*

[c]*Omitted category—homogeneous all—European neighbourhood—where almost no residents are of different ethic group.*

[d]*Omitted category—employed.*

[e]*The level-2 predictors have been centred around their grand mean.*

*$P<0.05$ (one-tailed tests).

The effects of the country-level variables—GNP and size of the non-European population—on perception of threat (equations 4 and 5) and on social distance (equations 4a and 5a) differ considerably. The negative–significant effect of per cent non-Europeans on perception of threat in equation 5 provides support for the hypothesis that anti-minority sentiment is likely to increase with the relative size of the out-group population. However, contrary to expectations, per cent non-Europeans does not significantly influence perception of threat in equation 4. Nor does it influence social distance in equations 4a and 5a. Consistent with expectations, GDP exerts negative impact on perception of threat in equations 4 and 5, lending support to the theoretical expectation that economic prosperity is likely to decrease negative attitudes toward ethnic minorities. Economic conditions, however, do not exert any impact on social distance as evident by the insignificant effect of GDP in equations 4a and 5a.

The analysis reveals curious and quite intriguing and consistent effects of neighbourhood type on perception of threat and on social distance. The data displayed in equations 1 and 1a show that anti-minority attitudes are lowest in mixed neighbourhoods (areas where 'some residents are ethnic minorities'). Anti-minority attitudes among residents of ethnic neighbourhoods do not differ, however, from attitudes among residents of 'all European' neighbourhoods. The findings revealed by equations 1 and 1a demonstrate that the effect of ethnic composition of the neighbourhood on either perception of threat or social distance is not monotonic.

When contact is included in the set of predictors, the findings suggest that contact does not fully mediate the relations between type of neighbourhood and attitudes toward ethnic minorities (the effects of residence in mixed neighbourhoods in equations 2 and 5 and equations 2a and 5a remain negative and significant). Furthermore, the data show that the effect

Table 4 Coefficients (SE) of one and bi-level regressions predicting perception of threat (Models 1–5) and social distance (Models 1a–5a) on individual-level and country-level variables[a]

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1a	Model 2a	Model 3a	Model 4a	Model 5a
Intercept	6.683*	6.880*	6.851*	5.870*	5.904*	3.020*	3.381*	3.359*	3.939*	3.966*
	(0.068)	(0.068)	(0.068)	(0.151)	(0.140)	(0.131)	(0.130)	(0.131)	(0.250)	(0.227)
Individual-level variables[b]										
Current neighbourhood[c]										
Mixed	−0.219*	−0.161*	−0.115*	−0.139*	−0.162*	−0.388*	−0.279*	−0.281*	−0.395*	−0.337*
	(0.019)	(0.019)	(0.025)	(0.037)	(0.028)	(0.036)	(0.036)	(0.049)	(0.052)	(0.052)
Ethnic	0.057	0.128*	0.351*	0.277*	0.139*	0.049	0.172*	0.553*	0.510*	0.224*
	(0.031)	(0.031)	(0.045)	(0.083)	(0.060)	(0.060)	(0.060)	(0.087)	(0.117)	(0.097)
Contact with foreigners	–	−0.530*	−0.453*	−0.469*	−0.536*	–	−0.959*	−0.893*	−0.923*	−0.956*
		(0.018)	(0.024)	(0.025)	(0.029)		(0.034)	(0.046)	(0.065)	(0.049)
Interaction term										
Mixed area × Contact	–	–	−0.102*	−0.074*	–	–	–	−0.012	0.070	–
			(0.035)	(0.035)				(0.068)	(0.088)	
Ethnic area × Contact	–	–	−0.410*	−0.239*	–	–	–	−0.677*	−0.527*	–
			(0.060)	(0.076)				(0.115)	(0.090)	
Contact × Per cent of foreigners	–	–	–	–	−0.054*	–	–	–	–	−0.059*
					(0.010)					(0.023)
Gender	−0.021	−0.005	−0.004	0.010	0.008	0.120*	0.148*	0.150*	0.223*	0.221*
	(0.017)	(0.017)	(0.017)	(0.034)	(0.033)	(0.032)	(0.032)	(0.032)	(0.061)	(0.060)
Marriage status	−0.011	−0.016	−0.017	0.052*	0.051*	0.065*	0.053	0.053	0.105	0.107
	(0.018)	(0.018)	(0.018)	(0.026)	(0.027)	(0.034)	(0.034)	(0.034)	(0.084)	(0.083)
Age	0.003*	0.001	0.001	0.001	0.001	0.025*	0.020*	0.020*	0.018*	0.019*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
Education	−0.096*	−0.086*	−0.086*	−0.080*	−0.079*	−0.121*	−0.104*	−0.104*	−0.108*	−0.108*
	(0.002)	(0.002)	(0.002)	(0.011)	(0.011)	(0.005)	(0.005)	(0.005)	(0.012)	(0.013)
Income per capita × 100	−0.007*	−0.006*	−0.006*	−0.008*	−0.008*	−0.009*	−0.006*	−0.006*	−0.008*	−0.009*
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)
Working status										
Not in the labour market	−0.289*	−0.271*	−0.269*	−0.276*	−0.278*	−0.319*	−0.292*	−0.290*	−0.310	−0.324
	(0.044)	(0.043)	(0.043)	(0.141)	(0.142)	(0.084)	(0.083)	(0.083)	(0.163)	(0.169)
Employed	−0.258*	−0.237*	−0.234*	−0.220	−0.223	−0.258*	−0.226*	−0.223*	−0.288	−0.302
	(0.043)	(0.043)	(0.043)	(0.140)	(0.141)	(0.083)	(0.082)	(0.082)	(0.189)	(0.196)
Political orientation	0.087*	0.082*	0.082*	0.096*	0.095*	0.184*	0.177*	0.176*	0.179*	0.178*
	(0.004)	(0.004)	(0.004)	(0.026)	(0.027)	(0.008)	(0.008)	(0.008)	(0.026)	(0.026)

Rural	0.103*	0.080*	0.081*	0.064	0.062	0.201*	0.163*	0.163*	0.103	0.102
	(0.018)	(0.018)	(0.018)	(0.049)	(0.048)	(0.035)	(0.035)	(0.035)	(0.059)	(0.061)
Country-level variables										
Per cent of foreigners	–	–	–	0.033	0.094*	–	–	–	−0.103	−0.004
				(0.042)	(0.042)				(0.061)	(0.097)
GDP × 100	–	–	–	−0.002*	−0.002*	–	–	–	−0.001	−0.001
				(0.001)	(0.001)				(0.001)	(0.001)
Variance component										
Country-level random effects—u_0	–	–	–	0.17690	0.15938				0.54615	0.49323
Individual-level random effect—r				2.08613	2.08972				7.32017	7.33368

Source: ESS, 2002.

[a]*Models 1–3 and Models 1a–3a present the coefficients of linear regression predicting prejudice toward foreigners and the desire for social distance by individual-level variables and with control for 21 countries as dummy variables (the coefficients are not presented).*

[b]*In Models 4–5 the slopes of the current neighbourhood, contact with foreigners and the ethnic neighbourhood × contact interaction have been allowed to vary across countries, while in Models 4a–5a the slopes of ethnic neighbourhood, contact with foreigners and the mixed neighbourhood × contact interaction have been allowed to vary across countries. All other individual-level variables are constrained to be identical across 21 countries. Education, political orientation, age, and income have been centred around their grand means. The dummy variables are un-centred.*

[c]*Omitted category—all-European neighbourhood—where almost no residents are of different ethic group.*

[d]*Omitted category—employed.*

[e]*The level-2 predictors have been centred around their grand mean.*

*$P<0.05$ (one-tailed tests).

of residence in ethnic neighbourhoods becomes positive and significant when contact is included in the set of predictors. Apparently, when variations in the scope of contacts across neighbourhoods are taken into account, negative attitudes are significantly higher among residents of ethnic neighbourhoods than among residents of mixed neighbourhoods or residents of all-European neighbourhoods. This finding can be explained as a result of the unique social characteristics of Europeans residing in ethnic neighbourhoods but it could be also explained within the theoretical framework of the 'ethnic competition model'. That is, in neighbourhoods where ethnic minorities compose majority of the residents, members of the majority population may express greater levels of perceived threat and social distance due to greater fear of competition.

The data displayed in Table 4 demonstrate, rather clearly, that the effect of contact on either perception of threat or on social distance is negative and significant in all equations. This finding reaffirms the thesis that positive inter-ethnic contact decreases negative attitudes toward out-group populations. Yet, the significant negative interaction terms between contact and neighbourhood's ethnic composition in equations 3 and 4 (for prejudice) and in equations 3a and 4a (for social distance) suggest that the impact of contact on reduction in perceived threat is more powerful and consequential for residents of ethnic neighbourhoods than for residents of mixed neighbourhoods or homogeneous neighbourhoods. It is highly probable that selection processes through which different populations are sorted into the different areas of the city have resulted in differential effect of contacts across neighbourhood. We will return to discuss this issue in details in the concluding section of the article. The negative and significant effect of the interaction term between per cent non-European and contact in equations 5 and 5a provides firm support to the argument that reduction in negative attitudes toward ethnic minorities due to positive contact is more pronounced in countries with large number of non-European than in countries with small number of non-Europeans.

Conclusions

The major goal of the study was to examine the complex relations between ethnic residential segregation, inter-ethnic contacts and attitudes toward ethnic minorities, especially the extent to which contact mediates the relations between ethnic composition of

neighbourhood and attitudes toward ethnic minorities. The data lend firm support to the theoretical expectation that residence in homogeneous all-European neighbourhood decreases opportunities for development of positive inter-ethnic contacts while residence in mixed and ethnic communities enhances such contacts. That is, positive contacts are most evident among Europeans who reside in ethnic neighbourhoods and least evident among Europeans who reside in all-European neighbourhoods. The data also provide firm support for the hypothesis that positive inter-ethnic contact decreases prejudice and social distance. However, the data provide only limited support for the hypothesis that contacts mediate the relations between ethnic residential segregation and attitudes toward ethnic minorities.

The analysis reveals that at the individual-level odds for developing positive contacts with members of ethnic minorities are higher among individuals with high education and high income and lower among older people, persons holding right-wing political orientation, among men and among rural persons. Contrary to theoretical expectation, the data suggest that at the country-level opportunities for establishment of positive contacts between members of the majority group and members of ethnic minorities do not increase with size of the minority population. Opportunities for development inter-ethnic positive contacts tend to increase, however, with economic prosperity.

The analysis lends firm support for the thesis that positive contacts are likely to decrease both perception of threat and social distance. Yet, positive inter-ethnic contacts do not fully mediate the relations between the ethnic composition of neighbourhood of residence and negative attitudes toward ethnic minorities. The findings reveal that the magnitude of the effects of inter-ethnic contacts on reduction in negative attitudes toward ethnic minorities varies across different type of ethnic neighbourhood. Specifically, the reduction in negative attitudes toward ethnic minorities due to positive inter-ethnic contacts is more pronounced among residents of ethnic neighbourhoods (areas where most residents are ethnic minorities) than among residents of mixed neighbourhoods (areas where some residents are ethnic minorities) and than residents of homogeneous all-European neighbourhoods (areas without ethnic minorities).

The stronger—more consequential—impact of contacts on reduction in negative attitudes toward ethnic minorities in ethnic neighbourhoods may reflect differential selection processes into neighbourhoods. Many Europeans who reside in ethnic neighbourhoods do not wish to live where they currently reside (and, thus, may feel trapped). They may also experience greater fear of competition due to the high proportion of ethnic minorities living in the neighbourhood. In effect, the results of our analysis reveal that when the scope of inter-ethnic contacts is taken into consideration, Europeans who live in ethnic neighbourhoods (where members of ethnic minorities compose the majority of the neighbourhood's residents) are more prejudiced than Europeans who reside in other types of neighbourhoods. Perhaps, when compared to others, Europeans who reside in ethnic neighbourhoods face greater competition and have to overcome and cross 'higher psychological barriers' than others before establishing friendship relations with ethnic minorities. It is possible, thus, that once these barriers are crossed, the impact of inter-ethnic positive contacts on reduction of negative attitudes becomes more pronounced in the ethnic neighbourhoods than in other places. On the other hand, it is also possible that members of ethnic populations that reside in 'Europeans neighbourhoods' are highly selective and are not representative of the ethnic populations (i.e. they are of relatively of higher socio-economic status). Thus, positive contacts with 'non-representative' out-group populations are not as consequential for reduction of negative attitudes toward ethnic populations.

The causal order between anti-minority sentiment and residential choice or between prejudice and inter-ethnic contact is beyond the scope of this article. Nor can it be tested with the cross-sectional data utilized here. Nevertheless the argument that initial predispositions toward ethnic minorities would affect the ways through which inter-ethnic contacts are formed and mediate the relations between ethnic composition of the neighbourhood and prejudicial attitudes seems quite plausible. The findings presented here reveal, rather forcefully, that ethnic residential segregation decreases opportunities for the establishment of inter-ethnic contacts and positive inter-ethnic contacts, in turn, are likely to reduce negative attitudes and social distance between the majority population and ethnic minorities. The social mechanisms underlying the complex relations between residential segregation, contacts, and attitudes toward out-group populations are yet to be further studied and delineated.

Notes

1. The definition of ethnic minorities in European societies is a complex matter. Ethnic and racial minorities have arrived to Europe as guest

workers, labour migrants, ex-colonials, refugees, asylum seekers, and immigrants. They arrived from a variety of countries of origin to different destinations, mostly due to historical circumstances. For example, many Pakistani, Bangladeshi, and Indian immigrants have arrived in England while many North-Africans reside in France and Belgium. Turks are highly concentrated in Germany while many Surinamese have made Netherlands their home. The legal and civilian status of ethnic and immigrant groups also vary considerably across countries. Yet, despite all these differences, all are viewed as non-European ethnic minorities and as members of an 'out-group' population.

2. Preferences for residence in homogeneous all-European neighbourhoods (i.e. areas inhabited exclusively by European residents) were found to be influenced by preferences for cultural homogeneity, by fear of negative impact that foreigners may exert on society, and by sense of social distance (Semyonov *et al.*, 2007). From this perspective, ethnic residential segregation can be also viewed, at least in part, as a product of social distance and prejudice.
3. Despite this uniform agreement, the idea that perceptions of threat and social distance can also affect social contacts and residential choices cannot be rejected. The analysis presented here, however, cannot determine the causal order of the association between perceptions and contact. Since our primary interest is to examine expectations derived from contact theory, residential segregation, and social contact are introduced to the analysis, respectively, as independent and intervening variable, and perception of threat and social distance are treated here as the dependent variables.
4. Israel was excluded from the analysis, because of the unique meaning of the concept 'immigrant' in this society.
5. The weight we use takes into account the proportion of different groups in the country and the proportion of each country's population in Europe.
6. It is important to note that contact with colleagues in place at work is also available in the data set but, as expected, the correlation between having immigrant colleagues and social distance ($r = -0.165$) is considerably lower than the correlation between having immigrants friends and social distance ($r = -0.277$) and the correlation between having immigrant colleagues and perception of threat ($r = -0.186$) is considerably lower than the correlation between having immigrants friends and perception of threat ($r = -0.252$). Likewise, a measure in which contact with friends and contact with colleagues are combined into one index does not improve the associations.
7. The correlation between perception of threat and social distance is $r = 0.417$.
8. The factor analysis procedure has resulted in a two-factor solution. The first factor pertains to 'perception of threat' ($\alpha = 0.8402$) and the second factor ($\alpha = 0.8402$) pertains to 'social distance'. Detailed results of the two factor solution will available from the authors upon request.
9. In light of the complexity in defining foreigners in Europe, we followed previous researchers on this issue (Quillian, 1995; Scheepers *et al.*, 2002; Semyonov *et al.*, 2006) and used estimates of the proportions of non-European residents provided by Eurostat (2003). The Eurostat is a highly reputable and recognized international institution that maintains high standards in data collection and standardization of definitions.
10. We have to keep in mind, however, that the distribution of the foreign population across neighbourhoods is also affected by their proportion in the population. The smaller is the relative size of ethnic minorities residing in the country the lower are the odds for members of the majority population to reside in ethnic neighbourhoods.
11. In the two-level models estimated here, the dependent variable are perception of threat and the desire for social distance, the individual level variables are the set of socio-demographic characteristics of the respondents, nested in the country-level variables (e.g. size of the out-group population and economic conditions). The two-level model with a vector of individual-level variables and one country-level variable can be represented by the following equations:

$$Y_{ij} = \beta_{0j} + \beta_{1j} \chi_{ij} + \varepsilon_{ij}, \quad (1)$$

Where Y_{ij} is the dependent variable of individual i in country j, β_{0j} is the intercept for country j, X is a vector of individual characteristic, β_{1j} is a vector of its coefficients, and ε_{ij} is the error term. Note, that in the case of perception of threat, the coefficients of current neighbourhood, contact, and ethnic neighbourhood–contact interaction have been allowed to vary across countries, while the effects of the rest socio-demographic variables are constrained to be equal across countries. In case of social distance, the coefficients of ethnic neighbourhood, contact and the mixed neighbourhood–contact interaction have been allowed to vary across countries, while the effects of the rest socio-demographic variables are constrained to be equal across countries. The intercept serves as dependent variable in the country-level equations:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} z_j + \upsilon_{0j} \quad (2)$$

Where γ_{00} is the grand across-country intercept, Z is a vector of country-level characteristics, γ_{01} is the vector of its coefficients, and υ_{0j} is an error term referring to country differences in perception of threat/social distance that are not attributable to the specific country-level variable. Equations 1 and 2 are estimated simultaneously, producing maximum-likelihood estimates of the variance components, which are then used to generate the β and γ coefficients.

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