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Regional Differences Matter
Examining the Dual Influence of the Regional Size of the Immigrant Population on Derogation of Immigrants in Europe

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Abstract
In this study, we examine which role the size of the immigrant population plays in explaining immigrant derogation within and between European regions. We draw upon group threat- and intergroup contact theory to consider the following question: does a larger size of immigrant population increase perceived group threat and thereby lead to greater immigrant derogation? Or does it increase intergroup contact and thereby ameliorate immigrant derogation? We test the empirical adequacy of these alternative suggestions using regionalized European Social Survey 2002 and official data which will be analyzed by means of multilevel structural equation modeling. Within regions, our results confirm that perceived group threat increases subsequent immigrant derogation. Likewise, intergroup contact reduces perceived group threat and thereby amends such derogation of immigrants. Between regions, our findings show that a larger size of the immigrant population increases both greater perceived group threat and intergroup contact. At the same time, the effects of perceived group threat and intergroup contact on immigrant derogation resemble those found within regions. In sum, these results lend evidence to the generalizability of both group threat- and contact effects. Implications of these findings for future research are discussed.

Key words: comparative research • European Social Survey • group threat • intergroup contact • multilevel structural equation modeling • prejudice

INTRODUCTION

Derogation of immigrants as indicated by majority members' anti-immigrant attitudes continues to pose an urgent social problem in many European societies. Contemporary attempts to explain such immigrant derogation commonly

start from a group threat perspective. Studies pertaining to this line of research consider a large or increasing size of the immigrant population to be a major source of group threat perceived by majority members and subsequent intergroup tension (e.g. Quillian, 1995; Scheepers et al., 2002). By contrast, research on intergroup contact theory suggests that a larger size of the immigrant population will amend intergroup relations by facilitating intergroup contact between majority members and immigrants (Wagner et al., 2006). Apparently, while the size of the immigrant population is of central meaning for both group threat- and intergroup contact theory, the conclusions following from these approaches could hardly be more opposite.

To date, evidence on the empirical validity of group threat- and intergroup contact theory when tested simultaneously in European contexts is only beginning to emerge. In the present study, we aim to improve on this state of research in two major ways. First, and most importantly, we use group threat- and intergroup contact theory to develop and test a set of competing hypotheses to answer the general question which role the size of the immigrant population plays for explaining immigrant derogation. Clearly, examining whether a larger immigrant population proves to further or to amend anti-immigrant stances among majority members is of both theoretical and of applied interest. Second, we aim to reach a better understanding regarding the generalizability of group threat- and contact effects as compared to previous studies. In order to do so, we use regionalized data from the European Social Survey 2002 linked with official statistics on the size of the regional immigrant population. This data source provides a particularly broad empirical scope for testing our hypotheses from a multilevel perspective. More specifically, existing comparative research on immigrant derogation in Europe traditionally uses respondents situated in countries as observational units. However, researchers increasingly realize that even *within* European countries considerable regional variation in both the size of immigrant population and immigrant derogation exists (Wagner et al., 2006). For this reason, we argue that our research design puts us in the position to deliver new and potentially important insights into the generalizability of group threat- and intergroup contact effects across European regions. In sum, the central question this study aims to answer reads as follows: does a larger size of the immigrant population increase perceived group threat and thereby lead to greater immigrant derogation? Or does it increase intergroup contact and thereby ameliorate immigrant derogation?

THEORY AND HYPOTHESES

Group Threat Theory

Group threat theory (Blalock, 1967; Blumer, 1958; Bobo, 1999) has proven a key approach for explaining immigrant derogation from a multilevel perspective (Quillian, 1995; Scheepers et al., 2002). The theory makes two subsequent

assumptions. First, in contexts with a large or increasing size of the immigrant population members of the host society will perceive immigrants as a threat to their own group (Quillian, 1995; Scheepers et al., 2002). In this study, we define the size of the immigrant population as percentage of immigrants relative to the total population in a geographical area. Likewise, we consider perceived group threat as anticipation of negative consequences for one's own group due to the presence of immigrants (Stephan and Renfro, 2002; see also Riek et al., 2006; Schlueter et al., 2008).

More precisely, perceived threats can relate to tangible and non-tangible goods alike (Stephan and Renfro, 2002; Stephan and Stephan, 2000). For instance, the notion that immigrants purposely exploit resources such as social security benefits or that immigrants endanger (alleged) prerogatives of majority members on the labor- or housing market are examples of threat perceptions which refer to tangible issues of the majority. By contrast, non-tangible threats commonly refer to religious or symbolic issues. For example, in the Western media immigrant groups of non-Western ancestry are often portrayed as favoring cultural or religious practices which are incompatible with the prevailing norms of the host society (Phalet and ter Wal, 2004). Thus, majority members' subjective perceptions that immigrants threaten the cultural order of the host society correspond to the idea of non-tangible, symbolic threats.

In a second step, group threat theory suggests that such perceived threat will motivate majority members' to react with immigrant derogation, discrimination and intergroup aggression (Green et al., 1998; Pettigrew, 1998a; Scheepers et al., 2002; Stephan and Renfro, 2002). The rationale underlying this assumption is that by means of immigrant derogation, members of the host society seek to protect or restore the status of their own group against the threat seen to be posed by immigrants.

Existing studies generally support the theory's assumption according to which perceptions of group threat increase immigrant derogation (Coenders, 2001; Raijman et al., 2003; Schlueter et al., forthcoming; Semyonov et al., 2004; Stephan and Renfro, 2002; for meta-analyses, see Riek et al., 2006; Stephan and Stephan, 2000). Compared to this, evidence that a larger size of the immigrant population gives rise to greater perceived group threat and subsequent immigrant derogation is mixed. On the one hand, using cross-national Eurobarometer data, Scheepers et al. (2002) find support for the assumed function of perceived group threat as a link between greater levels of the immigrant population and exclusionary attitudes towards immigrants. Similarly, using representative survey data for the Dutch population Schlueter and Scheepers (forthcoming) observe that Dutch respondents residing in municipalities with a larger share of immigrants report greater perceived group threat (mediated via perceived size of the immigrant population) which increases anti-immigrant attitudes. On the other hand, based on representative survey data of the German population, Semyonov et al. (2004) report that perceived group threat predicts exclusionary attitudes

towards foreigners living in Germany, whereas the *actual* proportion of foreigners as measured on the district level turns out to be unrelated to both perceived group threat (as well as perceived size of the foreign population) and exclusionary attitudes towards foreigners (Semyonov et al., 2004). The heterogeneity of these findings prompts us to re-examine the question whether a larger size of the immigrant population leads to perceived group threat and thereby increases greater anti-immigrant attitudes.

INTERGROUP CONTACT THEORY

It is well known that intergroup contact, defined as 'face-to-face interaction between members of clearly defined groups' (Pettigrew and Tropp, 2006: 754), is one of the most effective individual-level means to reduce intergroup derogation. Recent advances in intergroup contact theory emphasize the importance of structural characteristics for such contact experiences to take place (Pettigrew, 2006; Wagner et al., 2003, 2006; see also Schlueter and Scheepers, 2007). According to this multilevel perspective, a larger size of the immigrant population is of key importance for intergroup contact. More specifically, the assumption is that a larger size of the immigrant population provides greater opportunities for contact experiences between members of the host society and immigrants. This suggests that in the contexts of a larger immigrant population more intergroup contact will take place (Wagner et al., 2006; see also Blau and Schwartz, 1984). As stated above, such intergroup contact has proven to be a viable means to amend hostile stances toward immigrants (Pettigrew and Tropp, 2006). Initial theorizing and research posited that intergroup contact exerts its beneficial effects only under optimal conditions – including common goals, intergroup cooperation, equal status between group members and support by authorities (Allport, 1954). Yet in the course of the theory's development intergroup contact was found to improve anti-outgroup attitudes even though such supportive conditions were absent (Pettigrew, 1998b; Pettigrew and Tropp, 2006). It must be recognized that this evidence does not preclude negative contact experiences between majority members and immigrants (Stephan and Stephan, 1985). However, recent meta-analytical work provides unequivocal evidence that even casual intergroup contacts amend anti-outgroup attitudes (Pettigrew and Tropp, 2006). Interestingly, in regard to the question of *how* intergroup contact improves negative attitudes toward an outgroup, several studies show that, in large parts, intergroup contact reduces such negative attitudes via a reduction of perceived group threat and anxiety (Pettigrew and Tropp, in press; Stephan and Renfro, 2002). Thus, in contrast to group threat theory, intergroup contact theory suggests that a larger size of the immigrant population will increase intergroup contact. In turn, such intergroup contact is expected to decrease perceived group threat and thereby to reduce immigrant derogation.

To date, comparative evidence regarding the effects of intergroup contact on perceived group threat and anti-immigrant attitudes remains scant.[1] Using survey

data collected in four Western European Nations, Meertens and Pettigrew (1997) show that intergroup contact significantly reduces respondents' agreement to indicators assessing perceived threat and prejudice. Based on data from 17 European national contexts, McLaren (2003) shows that under the condition of a larger immigrant population those with more intergroup contact report less perceived threat (see also Wagner and van Dick, 2001). Yet even fewer studies subjected the assumption that a larger size of the immigrant population provides opportunities for intergroup contact and thereby ultimately amends anti-immigrant stances to an explicit empirical test. In support of this reasoning, Wagner et al. (2006; see also Wagner et al., 2003) show evidence that in German districts with a larger immigrant population, Germans' intergroup contact with immigrants is greater. Likewise, these contact experiences prove to reduce Germans' prejudice against immigrants. Similarly, the aforementioned study by Schlueter and Scheepers (forthcoming) shows in addition to the results presented earlier: Dutch respondents residing in municipalities with large immigrant population report greater intergroup contact. This intergroup contact was proved to decrease perceived group threat and thereby to reduce anti-immigrant attitudes. Still, even though both studies examine group threat- and contact effects from a multilevel perspective, it must be recognized that the respective findings hold for majority members from particular countries only. We now turn to our empirical analyses which seek to examine the generalizability of group threat- and contact effects for majority members across European regions.

HYPOTHESES

The previous discussion shows that group threat- and intergroup contact theory provide differing answers to the question which role the size of the immigrant population plays for explaining immigrant derogation. In this section, we summarize the theories' assumptions by means of testable hypotheses. In doing so, we account for differences among respondents both *within* and *between* contextual units (i.e. regions). This corresponds to the multilevel character of group threat- and intergroup contact theory and provides the basis for conducting particular rigorous empirical tests.

Group Threat Theory

According to the previous explication, the group threat framework suggests that a larger size of the immigrant population gives rise to subjective perceptions of group threat. In turn, such perceived group threat is expected to increase immigrant derogation. In regard to the present study, we summarize this reasoning as follows:

> H1: To explain differences among respondents between regions, we hypothesize that the larger the size of the regional immigrant population, the more group threat will be perceived.
> H2a: To explain differences among respondents *between regions*, we hypothesize that the more perceived group threat, the more immigrant derogation will take place.

H2b: To explain differences among respondents *within regions*, we hypothesize that *the* more perceived group threat, the more immigrant derogation will take place.
H3: To explain differences among respondents *between regions*, we hypothesize that a larger size of the regional immigrant population will increase immigrant derogation indirectly via greater perceived group threat.

Intergroup Contact Theory

Intergroup contact theory posits that a larger size of the immigrant population will increase intergroup contact. In reverse, such intergroup contact is expected to decrease perceived group threat and thereby to reduce immigrant derogation. We summarize this reasoning as follows:

H4: To explain differences among respondents between regions, we hypothesize that the larger the size of the regional immigrant population, the more intergroup contact will take place.
H5a: To explain differences among respondents *between regions,* we hypothesize that the more intergroup contact, the less group threat will be perceived.
H5b: To explain differences among respondents within regions, we hypothesize that the more intergroup contact, the less group threat will be perceived.
H6: To explain differences among respondents *between regions,* we hypothesize that a larger size of the regional immigrant population will reduce immigrant derogation indirectly through increased intergroup contact and reduced perceived group threat.
H7: To explain differences among respondents *within regions*, we hypothesize that intergroup contact will reduce immigrant derogation indirectly through reduced perceived group threat.

Thus, from a conceptual perspective, hypotheses (H1) to (H2b) and (H4) to (H5b) suggest direct effects between constructs, while hypotheses (H3), (H6) and (H7) refer to mediated effects (Baron and Kenny, 1986).

DATA AND MEASURES

Data

To address our hypotheses, individual data were derived from the first round of the European Social Survey (ESS; see NSD, 2007). This cross-national survey was conducted from September 2002 to October 2003 and covered 22 countries (21 European countries plus Israel) as ultimate sampling unit. For each country, representative samples were collected by means of face-to-face interviews of randomly drawn household representatives aged 15 years or older (Jowell et al., 2003). For the purpose of this study, we dropped all respondents without national citizenship or place of birth outside the country of data collection from the original sample. As mentioned above, we seek to explain differences in anti-immigrant social distance within and between European regions. For this purpose it was necessary to disaggregate the original ESS samples into a two-level hierarchical data structure with respondents (within-level) being nested in regions (between-level). More precisely, we used country-specific indicator

variables available in the ESS to group respondents into regional units corresponding to the Nomenclature of Statistical Units classification Scheme (NUTS; see Eurostat, 2003). The NUTS classifies European regions according to socioeconomic, cultural and historical characteristics (Eurostat, 2003). It thereby enables researchers to account for subnational variations of respondents' standing on the theoretical constructs of interest. Conceptually, the NUTS comprises three different regional subdivisions which divide each country into large-scale (NUTS 1), medium-scale (NUTS 2) and small-scale (NUTS 3) regions. However, the NUTS-levels provided by the ESS partially differed between countries: While we generally grouped respondents into NUTS 2 regions, 24.5 percent of all respondents were grouped according to NUTS1.[2] Further, respondents both from Israeli and Italian regions were dropped from the sample as for these regions no information on the objective size of the immigrant population was available. The final sample size comprised $N_{\text{within}} = 35{,}047$ respondents nested in $N_{\text{between}} = 158$ regions. The number of respondents per region ranged from a minimum of nine to a maximum of 1417 respondents, with a mean value of 217.8 (standard deviation = 215.11).

Measures

Immigrant Derogation

To operationalize immigrant derogation, we use two indicators on respondents' anti-immigrant social distance. On 11-point Likert-type scales, respondents were asked to evaluate how much they would mind or not mind if someone of the same race or ethnic group[3] from another country who came to live in their country 'was appointed as (. . .) [their] boss' (item 1) or 'married a close relative of (…) [theirs]' (item 2). Substantial response options for both items ($r = .72$)ranged from 'not mind at all' (0) to 'mind a lot' (10).[4] Higher values indicate greater anti-immigrant social distance.

In line with existing conceptualizations of social distance (Bogardus, 1925; Park, 1924; see also Hello, 2003), these items refer to respondents' personal preferences for interaction with immigrants in the occupational and the private domain. Thereby, these items measuring social distance differ from respondents' perceived consequences of immigrants for the host society described next. On both the between- and within-regions level, these items were used for constructing a latent variable assessing anti-immigrant social distance.

Perceived Group Threat

To assess perceived group threat, we chose three indicators.[5] Respondents were asked to evaluate on 11-point Likert-type scales ranging from '0' to '10' a series of statements on the consequences for the host society following from the presence of immigrants. Item (1) read as follows: 'Most people who come to live here work and pay taxes. They also use health and welfare service. On balance, do you think that people who come here take out more than they put in or put in more

than they take out?' Answer options for this item ranged from 'Generally take out more' to 'Generally put in more'. Item (2) was 'Would you say that it is generally bad or good for [country's] economy that people come to live here from other countries?' Here, answer options ranged from 'Bad for the economy' to 'Good for the economy'. Item (3) asked 'And, using this card, would you say that [country's] cultural life is generally undermined or enriched by people coming to live here from other countries?' For this item, answer options varied from 'Cultural life is undermined' to 'Cultural life is enriched'. Resembling operationalizations of perceived group threat used in earlier studies (e.g. Raijman et al., 2003; Scheepers et al., 2002; Schlueter et al., forthcoming), these items (Cronbach's $\alpha = .71$)are consistent with our general definition of perceived group threat as negative consequences seen to follow from the presence of an outgroup.[6] In line with this definition, none of these indicators represents in itself any specific call for a derogation of immigrants. After recoding, higher values mark greater perceived group threat. On both the between- and within-regions level, these items were used as observed indicators for a latent variable measuring perceived group threat.

Intergroup Contact

To measure respondents' intergroup contact with members of the immigrant population, we used two indicators. Respondents were asked on three-point Likert-type scales 'Do you have any friends who have come to live in [country] from another country?' (item 1) and 'Do you have any colleagues at work who have come to live in [country] from another country?'. These indicators ($r = .47$) enable us to examine the effects of intergroup contact in both private (item 1) and in occupational (item 2) domains. Substantial response options for both items were 'Yes, several' (1), 'Yes, a few' (2) and 'No, none at all' (3). We recoded these values so that higher values indicate greater intergroup contact. Both items were used as observed indicators of a latent variable assessing intergroup contact on the between- and within-regions level.

Background Variables

To hedge the measures of our theoretical constructs against potentially confounding influences, we included a series of background variables in our structural models. *Gender* was measured with males as the reference category (1 = female). *Age* was measured in years. *Educational level* was assessed using a variable containing information on respondent's full-time education completed (in years, categorized, 1 = '0–4 years', 2 = '5–8 years', 3 = '9–12 years' and 4 = '13 years and more'). Regarding *unemployment*, a dummy variable was used which indicated whether the respondent was unemployed and actively searching for employment on the job market during the last seven days prior to the survey (1 = unemployed).

Constructing a Proxy-measure of the Objective Size of the Regional Immigrant Population

To obtain objective information on the size of the regional immigrant population, we constructed a proxy-measure using official figures on the national

and non-national workforce per region as provided by EUROSTAT, the statistical office of the European Union (Eurostat, 2007a) which is based on the European Union Labour Force Survey 2002 (EU-LFS; see Eurostat, 2003). An advantage of the EU-LFS is its high degree of standardization which reduces problems of comparability (van Tubergen et al., 2004). In the EU-LFS, all respondents without citizenship of the country in which data collection took place are classified as non-nationals (Eurostat, 2007a). We used this information to calculate the percentage of the regional non-national work-force from the total regional workforce, and employed these percentages as proxy-measure of the objective size of the regional immigrant population. The original EU-LFS raw data delivered by EUROSTAT referred to NUTS 2 regions. Therefore, before calculating the respective percentage scores of the non-national workforce for those individual ESS data which were grouped into NUTS 1 regions, we aggregated the corresponding NUTS 2 regions of the EU-LFS to NUTS 1. Finally, we linked all percentage scores with the corresponding individual ESS data. Due to considerable skewness of these percentages, we recoded the original data into five categories: '0% < 0.5%' = 1, '0.5% < 2%' = 2, '2% < 5%' = 3, '5% < 10%' = 4 and '10% and more' = 5.[7] We acknowledge that the percentages based on the EU-LFS should be considered as *proxy*-measures of the size of the regional immigrant population only (Eurostat, 2007b). However, given our primary interest in quantifying relative differences in the size of the immigrant population between regions rather than quantifying their 'exact' numerical size, we believe this measure provides defendable information. Moreover, to the best of our knowledge the EU-LFS data used in this study currently provide the only European (cross-regional) data on the percentage of the foreign labour force with an acceptable quality in terms of reliability and comparability.

METHOD

As described in the previous section, we arranged our data for hypotheses-testing in a hierarchical two-level structure where respondents are nested within regions. However, due to the clustering of lower-level observational units (e.g. respondents) in higher-level observational units (e.g. regions) in hierarchically ordered data the assumption of statistical independence among the data might not hold. Amongst others, ignoring substantial amounts of non-independence by using conventional statistical test procedures entails the risk of obtaining deflated standard errors, which results in an increased potential for conducting type I errors (Hox, 2002).

To overcome such problems when testing our hypotheses, we opted to use multilevel structural equation modeling (multilevel SEM or 'disaggregated approach'; see Muthén and Satorra, 1995). This flexible methodological approach has been deemed as particularly suitable for cross-cultural research using large-scale survey data (Cheung and Au, 2005).

In brief, for two levels of analysis multilevel SEM considers the total variance in the variables of interest to comprise both between- and within group-variance.

Generally, the term between-group variance refers to variance residing between groups (e.g. regions) while within-group variance resides within groups (e.g. respondents; Hox, 2002; Muthén and Satorra, 1995; Zyphur et al., 2007). In technical terms, the between-group variance equals the aggregated group means of the variables of interest whereas the within-group variance equals the centered individual scores from the corresponding group means. As pointed out by Zyphur et al. (2007), each group's average score on the variable of interest is that group's contribution to the between-group variance. This means that at the group-level, only the group's mean values can vary, and this part of the variance is independent of the variance within-groups. In turn, on the within-group level 'the only value which can vary is the deviation away from the group's mean' (Zyphur et al., 2007: 6). This variance is again independent of the group-level variance.[8] Due to the decomposition of total variance in its between- and within-group components, multilevel SEM provides adequate estimates of coefficients, standard errors and chi-square statistics for nested data structures.

In addition, multilevel SEM yields the following advantages for testing theory-guided models given hierarchical data structures. First, due to the decomposition of the total variance in within- and between components, multilevel SEM allows for simultaneous tests of statistical relations among the variables of interest on the within- and between level of analysis. This means that researchers can explicitly test whether the statistical relations found for the within-group level of analysis of the variables are resembled by or different from the relations found for between-group level of analysis. Second, and similar to conventional SEM, this approach allows for particularly precise specifications and statistical tests of complex (i.e. direct and indirect) relations among observed and latent variables. Third, when multiple observed indicators are available, measurement models can be applied to multilevel SEM to account for measurement error in the observed variables. Finally, the empirical adequacy of the multilevel structural equation model, which the researcher imposes on the sample, can be evaluated using a range of statistical fit indices. We apply the χ^2-to-degree-of-freedom-ratio (χ^2/d.f.; Marsh and Hocevar, 1985), the CFI (comparative fit index; Bentler, 1990), TLI (Tucker-Lewis-Index; Tucker and Lewis, 1973), the RMSEA (root mean square error of approximation; Steiger and Lind, 1980) and, for both the within-group and the between-group levels of analysis, the SRMR (standardized root mean square residual; Bentler, 1995). Following Hu and Bentler's (1999) recommendations in regard to model fit, for the CFI and TLI we considered values equal to or higher than .95 as adequate, while we set the corresponding values for the RMSEA and SRMRs at .05 or below. For all analyses, the statistical program Mplus 4.1 (Muthén and Muthén, 1998–2007) was used. Full information maximum likelihood estimates were applied to account for missingness.

RESULTS

Preliminary Analyses

Before hypotheses testing, we estimated a variance components model to obtain intraclass correlation coefficients ρ (ICC; Koch, 1983). This step served to evaluate the ratio of the between-group variance to the total (between- and within-group) variance. For hierarchical data, a common convention suggests that when ICCs are around .05 researchers must account for the non-independence in the data. Table 1 shows that the ICCs ranged from $\rho = .049$ to $\rho = .13$.

For example, the ICC of $\rho = .13$ for the first variable assessing intergroup contact indicates that 13 percent of this variable's total variance are due to differences in respondents' standing on this variable between regions. In conclusion, we consider the size of the ICCs to be sufficient to employ multilevel SEM for testing our hypotheses.

Hypotheses Testing

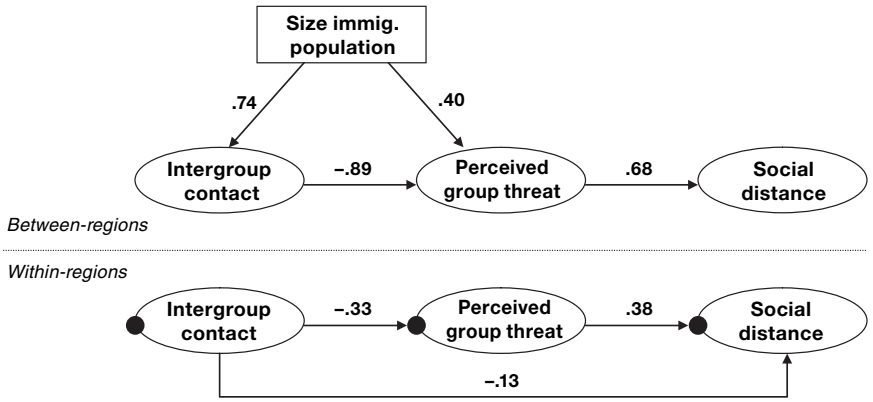
Figure 1 summarizes the findings from our hypotheses testing using a simplified path diagram. For reasons of clarity, graphical representations of the observed indicators, error terms and insignificant structural paths were omitted.

Figure 1 reads as follows: while the lower part of this diagram covers the structural relations among the theoretical constructs within regions, the upper part depicts the structural relations of these constructs between regions. One-headed arrows indicate direct effects from an exogenous to an endogenous variable for both the within- and the between-region levels of analysis. All parameters shown represent standardized regression coefficients. In the lower part of the diagram, we only deal with latent variables which are illustrated by the ellipses. The black points situated on the left part of the ellipses signify that the variance of these latent constructs is specified to vary also between regions. This between-region variance is portrayed by the ellipses in the upper part of the diagram.

Table 1 Intraclass correlation coefficients (ICC) for the observed indicators of the latent constructs

Indicators	ICC
Social distance	
(1) mind immigrant as boss	.052
(2) mind immigrant marry as a relative	.049
Perceived group threat	
(1) immigrants take out more	.132
(2) immigrants bad for country's economy	.063
(3) cultural life undermined by immigrants	.150
Intergroup contact	
(1) immigrant friends	.132
(2) immigrant colleagues	.049

Figure 1 Path diagram of multilevel SEM for hypotheses testing.



The rectangle depicts the observed measure of the objective regional size of the immigrant population which varies between regions only.

According to the fit indices, we note that the model fits the data well ($\chi^2 = 238.25$; d.f. = 42; χ^2/d.f. = 5.67; CFI = .99; TLI = .98; RMSEA = .015). Additional information follows from the SRMR-values, which indicate that both the within- and between-part of the model are adequately specified ($SRMR_{between} = .038$; $SRMR_{within} = .009$.).[9] It should be recognized that in multilevel SEM between-group parameter estimates (e.g. regression coefficients) commonly are greater in their magnitude than within-group parameter estimates. This is due to the fact that the between-group part of the model draws on aggregated group means where much of the measurement error is likely to be removed (Muthén, 1994). A complete description of all parameter estimates and standard errors including the background variables can be found in Table 2.

First, we consider the findings in regard to group threat theory. As formulated in hypothesis (H1), we expect that a larger size of the regional immigrant population will account for greater perceived group threat among respondents between regions. In support of this expectation, the data reveal a significantly positive effect from the size of the regional immigrant population on perceived group threat ($\beta = .40, p < .001$). This means that respondents residing in regions with a larger immigrant population show higher average levels of perceived group threat.

Next, we consider the findings on the relation between perceived group threat and immigrant derogation. As stated in hypothesis (H2a), we expect that perceived group threat will lead to greater immigrant derogation among respondents between regions. In line with this reasoning, the results show a significantly positive effect from perceived group threat on social distance towards immigrants ($\beta = .68, p < .001$). Likewise, according to hypothesis (H2b), we expected that perceived group threat will account for differences in immigrant derogation

among respondents within-regions. As the significantly positive within-region parameter estimate of perceived group threat indicates ($\beta = .38, p < .001$), this suggestion gains empirical support, as well. As an additional test, we set out to examine whether the size of the regional immigrant population increases indeed immigrant derogation via greater perceived group threat. In support of this assumption summarized in hypothesis (H3), the corresponding indirect effect[10] from the size of the regional population on social distance towards immigrants via perceived group threat was significantly positive ($\beta_{\text{indirect}} = .27, p < .05$).

What do the findings in regard to intergroup contact theory tell us? First, we explore the bivariate effect from the size of the regional immigrant population on respondents' anti-immigrant social distance. Interestingly, we find that respondents from regions with a larger immigrant population show less anti-immigrant social distance ($\beta = -.21, p < .001$).[11] Keeping in mind the evidence for group threat theory from the foregoing analyses, this preliminary result suggests that a larger immigrant population might also reduce anti-immigrant social distance. To examine whether this initial finding is indeed explained by intergroup contact theory, we now turn to the results from hypotheses testing. We observe that the effect from the size of the regional immigrant population on intergroup contact is significantly positive ($\beta = .74, p < .001$). This evidence supports hypothesis (H4), according to which the size of the regional immigrant population accounts for between-region differences in respondents' frequency of intergroup contact. Next, we consider the effects from intergroup contact on perceived group threat. As summarized in hypothesis (H5a), we expect that greater intergroup contact will lead to reduced perceived group threat among respondents between regions. In line with this assumption, we find that intergroup contact significantly reduces perceived group threat on the regional-level of analysis ($\beta = -.89, p < .001$). At the same time, the data also reveal support for hypothesis (H5b). For respondents within regions, greater intergroup contact proves to reduce perceived group threat as well ($\beta = -.33, p < .001$). Drawing upon these findings, we consider the indirect effects pertaining to intergroup contact as summarized in hypothesis (H6) and hypothesis (H7). We find clear support for hypothesis (H6): for respondents between regions, the indirect effect leading from the size of the regional immigrant population via intergroup contact and perceived group threat on social distance towards immigrants is significantly negative ($\beta_{\text{indirect}} = -.45, p < .001$). Similarly, in showing that intergroup contact amends immigrant derogation via reducing perceived group threat for respondents within regions ($\beta_{\text{indirect}} = -.12, p < .001$), hypothesis (H7) gains empirical support as well. In addition, for respondents within regions we note that intergroup contact exerts an additional direct effect on social distance ($\beta = -.13, p < .001$). Before discussing the implications of these major results, we briefly consider the influence of the background variables on intergroup contact, perceived group threat and social distance as shown in rows one to four in the lower (within-region) part of Table 2.

Table 2 Unstandardized regression coefficients (standard errors) and standardized regression coefficients

	Between-regions								
	Intergroup contact			Endogenous variables Perceived group threat			Anti-immigrant social distance		
Exogenous variables	***b***	**SE**	β	***b***	**SE**	β	***b***	**SE**	β
Intergroup contact	–	–	–	−2.13	(.35)	−.89**	−.392	(.378)	−.17
Perceived group threat	–	–	–	–	–	–	.648	(.127)	.68**
Regional size immigrants	.142	(.011)	.74**	.183	(.06)	.40*	.022	(.05)	.05
$R^2_{between}$	.58			.38			.60		
	Within-regions								
Exogenous variables	Intergroup contact			Endogenous variables Perceived group threat			Anti-immigrant social distance		
	b	**SE**	β	***b***	**SE**	β	***b***	**SE**	β
Gender[a]	−.054	(.007)	−.08**	−.07	(.019)	−.04**	−.20	(.039)	−.04**
Age[a]	−.003	(.001)	−.21**	−.003	(.001)	−.06**	.013	(.002)	.09**
Education[a]	.019	(.001)	.22**	-.046	(.003)	−.21**	−.025	(.006)	−.04**
Unemployed[a]	.002	(.019)	.001	.073	(.044)	.01	.18	(.105)	.01
Intergroup contact	–	–	–	−.81	(.079)	−.33**	−.94	(.074)	−.13**
Perceived group threat	–	–	–	–	–	–	1.006	(.046)	.38**
R^2_{within}	.16		.19				.23		

Model Fit: $\chi^2 = 238.25$; d.f. = 42; χ^2/d.f. = 5.67; CFI = .99; TLI = .98; RMSEA = .015; $SRMR_{between} = .038$; $SRMR_{within} = .009$.

[a]Variance constrained to the within-level only.

*$p < .01$; **$p < .001$; all other effects are above $p = .10$.

It must be acknowledged that due to the large sample size ($N = 35{,}047$) even trivial effects of the background variables are likely to reach conventional levels of statistical significance. Therefore, we pay particular attention to the relative magnitude of these effects as indicated by the standardized regression coefficients. We find that age exerts a substantial negative effect on intergroup contact ($\beta = -.25$, $p < .001$) which means that elderly members of the host society report fewer social contacts with immigrants. Regarding education, we find that respondents with higher education experience more intergroup contact ($\beta = .22$, $p < .001$). At the same time, the data confirm that higher education amends perceptions of group threat ($\beta = -.22$, $p < .001$). Interestingly, the direct negative impact of education on anti-immigrant social distance fails – though being significant in a statistical sense – to reach any substantial size after controlling for the other variables ($\beta = -.04, p < .01$). However, additional tests prove that education significantly reduces anti-immigrant social distance in indirect ways via both reduced perceived group threat ($\beta_{\text{indirect}} = -.084$, $p < .001$) and increased intergroup contact ($\beta_{\text{indirect}} = -.056, p < .01$).

DISCUSSION

In this study, we set out to further understanding which role the size of the immigrant population plays in explaining anti-immigrant attitudes within and between European regions. To examine this relationship, we used group threat- and intergroup contact theory to develop and test a set of competing hypotheses. On the one hand, group threat theory lead us to expect that a larger size of the immigrant population will increase perceived group threat which, in turn, will lead to greater anti-immigrant social distance. On the other hand, intergroup contact theory suggests that a larger size of the immigrant population will result in increased intergroup contact between members of the host society and immigrants. In reverse, such intergroup contact is assumed to reduce perceived group threat and thereby to amend anti-immigrant social distance.

We tested these alternative assumptions from a comparative perspective using regionalized ESS 2002 survey data enriched with official statistics on the size of the immigrant population. Unlike previous work, which examined the role of the size of the immigrant population within single countries only (e.g. Schlueter and Scheepers, forthcoming; Wagner et al., 2006), this research employed a multilevel design comprising individual respondents nested in a broad number of European regions.

Our analyses lend empirical evidence to both group threat- and intergroup contact theory: in support of group threat theory, the results prove that a larger size of the regional immigrant population leads to greater perceived group threat and thereby increases immigrant derogation. At the same time, however, the findings also provide firm evidence for intergroup contact theory by showing that a larger size of the immigrant population increases intergroup contact. This, in turn, proved to reduce perceived group threat and thereby to amend anti-immigrant social distance.

In addition, we found intergroup contact to exert a direct negative effect on anti-immigrant social distance. In line with earlier research (Pettigrew, 1998b; Pettigrew and Tropp, in press; Stephan and Renfro, 2002; see also Schlueter and Scheepers, forthcoming), we take this result to indicate that further mediation processes should be considered in explaining how intergroup contact exerts its ameliorating effects on outgroup derogation. In sum, we conclude that a larger size of the immigrant population can both increase and ameliorate negative stances towards immigrants. In addition to results of earlier research in this field, this study gives firm evidence for the cross-cultural generalizability of contact and group threat effects.

We note the following limitations of this work. First, it should be recognized that the data we analyzed are cross-sectional. Therefore, all findings observed in this study are correlational only. As a consequence, we could not test the causal order of the theoretical constructs we employed. Thus, while the flow of causality from the objective size of the immigrant population to both intergroup contact and perceived group threat is self-evident, other causal relations assumed in this research might be less clear. However, results from related research clearly support the causal order guiding the present analyses. For example, consistent with our assumption that intergroup contact precedes perceptions of group threat and immigrant derogation, a recent meta-analysis shows that the effects of intergroup contact on outgroup derogation are typically stronger than the reverse impact of outgroup derogation on intergroup contact (Christ and Wagner, 2007; Pettigrew and Tropp, 2006). Also, Schlueter et al. (2008) provide cross-national longitudinal evidence that perceived group threat causes outgroup derogation. Still, further work on the issue of causality in group threat- and intergroup contact theory is surely needed.

Second, our measure of the objective size of the regional immigrant group comprises only those immigrants who were at the disposal of the labour market. Likewise, most of the indicators we used to assess perceptions of threatened group interests refer to tangible, economic issues. However, particularly in view of these operationalizations it is important to bear in mind our previous discussions according to which perceptions of threats to the ingroup seen to be posed by immigrants are not restricted to tangible issues only. Thus, future research might ideally employ more comprehensive measures of the immigrant population and also explore whether perceived group threats which refer to tangible respectively non-tangible issues can be separated into distinct constructs. Subsequently, such research might then examine if different types of perceived group threat exert differential effects on specific outcome variables. For example, to explain ingroup members' preferences to restrict the cultural rights of the outgroup, it seems reasonable to examine whether perceived threats to the ingroups' cultural order as compared to perceived threats to the ingroups' economic resources show a greater explanatory power.

There are further issues which are beyond the scope of the present study which should be addressed in future research. For example, due to limitations

in the present data we were unable to examine whether respondents' patterns of intergroup contact, perceived group threat and social distance vary according to different immigrant groups. We believe that investigating the generalizability of this study's findings for different immigrant groups – for example, those of Christian or Muslim faith – is likely to increase social science understanding of outgroup derogation.

Another issue relates to our major finding that a larger size of the immigrant population increases perceived group threat and social distance. We caution scholars to interpret this result in a deterministic manner whereby a larger size of the immigrant population inevitably worsens intergroup relations. Rather, we believe this relation to be contingent on additional factors which were not observed in this study. For example, it has long been hypothesized that for relatively large sociospatial contexts, the demographic size of an outgroup is likely to evoke political propaganda targeted against this outgroup (Blumer, 1958). According to this reasoning, it is not the objective size of the immigrant population per se, but the political propaganda targeted against immigrants which might operate as primary source of perceived group threat and immigrant derogation (Wagner et al., 2007). Thus, examining this line of reasoning remains a key challenge for subsequent studies.

Notwithstanding these limitations, this study delivered potentially important insights into how the size of the immigrant population affects social distance towards immigrants via perceived group threat and intergroup contact. At the same time, we think this research also bears quite practical implications. If intergroup contact reduces and/or prevents perceived group threat and social distance towards immigrants as confirmed by the present results, then promoting such intergroup contacts must be seen as a powerful means for policies designed to improve the stances of members of the host society towards immigrants in general.

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NOTES

1 But see Pettigrew and Tropp (2006) for a meta-analysis of separate studies from various contexts on intergroup contact effects.

2 Because for the country samples from Belgium, France, Germany, Luxemburg and the United Kingdom the ESS provided no other information, respondents from these countries were grouped according to NUTS 1, which comprise a minimum of 3 million to a maximum of 7 million inhabitants. Respondents from all other country samples were grouped according to NUTS 2, which comprise a minimum of 800,000 to a maximum of 3 million inhabitants (see Eurostat, 2007).

3 It is important to note that in the ESS, the social distance items were also asked with regard to immigrants 'of a different race or ethnic group'. In principle, this offers researchers the interesting opportunity to compare answer reactions towards

different immigrant groups. Unfortunately, confirmatory factor analyses showed that these items could not be distinguished from one another. In addition, modelling these items as indicators of a single latent variable necessitated to include several correlations among the error terms to achieve an acceptable model fit. We thus decided to examine these items in isolation and found no substantial differences when using the items referring to immigrants of a different race or ethnic group.

4 Please note that the intercorrelations reported in this section should be regarded as tentative only as they are based on a combination of the between- and within-region variance (see Hox, 2002).

5 We selected these items from a longer item battery in the ESS which comprised 10 items. Acknowledging that multilevel structural equation modeling is computationally demanding, in preliminary multilevel confirmatory factor analyses these indicators proved to perform best.

6 Further, these items cover both threats related to tangible (item 1 and item 2) and non-tangible goods (item 3).

7 The regions (contextual-level units) used in the subsequent analyses distribute as follows across these categories: category (1) = 15.5%; category (2) = 23.2%; category (3) = 27.7%, category (4) = 16.1%; category (5) = 17.4%.
The corresponding distribution of respondents (individual-level units) across these categories is: category (1) = 9.6%; category (2) = 18.3%; category (3) = 35.3%; category (4) = 20.7%; category (5) = 16.2%.

8 Consequently, as the between- and within-group variance components are orthogonal and additive, the total covariance matrix (Σ_T) can be seen as constituted by a between-group population covariance matrix (Σ_B) plus a pooled within-group covariance matrix (Σ_W). Thus,

$$\Sigma_T = \Sigma_B + \Sigma_W \quad (1)$$

Technically, the goal in multilevel SEM is to find adequate sample estimates for these covariance matrices by means of the sample total covariance matrix (S_T). The latter is, in turn, constituted by a sample between-group covariance matrix (S_B) and a pooled within-group covariance matrix (S_W),

$$S_T = S_B + S_W \quad (2)$$

More detailed information on the specific estimation procedures of multilevel SEM, can be found, for example, in Hox (2002), Kaplan and Elliott (1997), Muthén (1994) and Muthén and Satorra (1995).

9 Furthermore, we like to acknowledge that unconstraining additional paths among the latent variables shown in Figure 1 did not improve model fit.

10 Specific indirect effects were estimated using the MODEL VIA command of the Mplus statistical software.

11 The fit of this exploratory model was good ($\chi^2 = 5.59$; d.f. = 4; χ^2/d.f. = 1.39; CFI = 1; TLI = .99; RMSEA = .003; $SRMR_{between}$ = .006; $SRMR_{within}$ = .001).

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