

## **'WHITE FLIGHT' OR POSITIVE CONTACT?: LOCAL DIVERSITY AND ATTITUDES TO IMMIGRATION IN BRITAIN, 2009-11\***

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*Abstract. Does the local presence of immigrant groups increase white hostility to immigration? Most research in the United States and Europe finds that diverse neighbourhoods reduce white opposition to minorities and immigration. However, most studies at higher geographies such as county or metro area find the reverse effect. We confirm this pattern for England and Wales for 2009-11. Yet contextual studies are plagued by selection bias, which is where this paper makes its main contribution. Is white tolerance in diverse neighbourhoods the result of a positive effect of interethnic contact, or does it arise from the 'hydraulic' pressure of ethnic diversity on anti-immigrant whites, who exit diverse areas but remain within wider geographies as radicalized opponents of immigration? The growing literature on local-contextual effects on public opinion remains vulnerable to the charge of self-selection. We provide the first attempt we are aware of to track the opinions of in- and out-migrants, as well as stayers, from local areas over an extended period. We do so by utilizing twenty years of large scale geocoded British longitudinal data over 1991-2011 to account for the selection effects associated with 'white flight'. This work therefore has important implications for previous and future work on contextual effects. We find evidence that largely refutes self-selection. However, an important reason diverse contexts are associated with tolerant attitudes is that whites in them are more transient.*

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How does racial context affect attitudes and voting? We focus on the specific case of how the share of ethnic minorities at ward and Local Authority level affects white British attitudes to immigration in England and Wales. This is pertinent to the debate on the effects of diversity on solidarity, i.e. Putnam 2007. An extensive tradition of research on the racial threat hypothesis, beginning with the landmark studies of Key (1949) and Blalock (1957) revealed higher levels of white animus towards African-Americans in the relatively diverse South, especially in counties with higher proportions of African-Americans. Subsequent work generalized these findings to the Midwest and Northeast (Stein et al. 2000: 286). Since then, studies (many summarized in table 1) have been undertaken at various geographic scales, examining a series of dependent variables including attitudes to racial minorities, multiculturalism policies, immigrants and immigration. Some are aggregate analyses while others take the form of surveys which include contextual predictors. Most derive contextual data from the census, though several ask individuals to answer with reference to their perceived 'neighbourhood'. An increasing number of analyses are multi-level in nature. The methodology varies: sometimes there are controls for socioeconomic and political characteristics of neighbourhoods; certain works contain a richer variety of attitudinal items than others; some focus on attitudes to African-Americans, others on Hispanics or Muslims, still others on immigrants or support for anti-immigrant parties. More recently, scholars have explored how changes and levels of immigrant presence interact. Newman (2013) suggests native-born white Americans respond especially negatively to sharp changes in immigration in tracts with a low initial immigrant presence.

From this research, a pattern - though far from uniform - emerges. A summary, by no means complete, of work in this area, appears in table 1 which builds on a similar exercise undertaken by Cho and Baer (2011). We located 24 studies at ward level (population generally 10,000-30,000) or below, and found that about three-quarters link local diversity to

*reduced* animosity toward minorities, immigrants and immigration while just 25 percent find that more diversity in the locale increases hostility. Work at larger geographic scales where outmigration is costlier - and therefore less likely to be a determinant of attitudes - reveals a different relationship. Suddenly, the association between diversity and toleration reverses itself. At county level or above, for instance, diversity is associated with *heightened* white threat perceptions of minorities or immigrants in 84 percent of a sample of 44 papers (by no means exhaustive) which deploy contexts containing approximately 100,000 people or more.<sup>1</sup>

[Table 1 here]

Does diversity really increase white toleration in small geographies? Skeptics plausibly argue the reverse to be true: intolerant whites leave diverse contexts, thus the causal arrow runs in the opposite direction. Their intuitions are backed by the Multi-City Study of Urban Inequality (MCSUI) which uses neighbourhood racial composition showcards to tap underlying residential proclivities. It finds white respondents who prefer more homogeneous neighbourhoods in the four cities sampled - Detroit, Los Angeles, Boston and Atlanta - are significantly more likely to hold negative opinions of minority groups (Krysan 2002). A replication of this study in the Netherlands renders a similar verdict, adding that whites who are more hostile to minorities are significantly more likely to say they would leave an area with a large proportion of minorities (van Londen 2012). At the subjective level therefore, the link between white attitudes to minorities and white flight appears robust and generalizable

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<sup>1</sup> Some of the exceptions entail situations where hostility is directed toward specific groups (i.e. Hispanics in America, Muslims in Europe, low-income minorities) but not others (i.e. East Asians, Afro-Caribbeans in Europe, high-income minorities). See, for example, Ha (2010) for East Asians, or Biggs and Knauss (2012) for Afro-Caribbeans.

across several Western nations. Which endorses skeptics' claims that self-selection accounts for divergent findings between small and large-scale contexts.

### British Research

No existing studies of British attitudes to immigration utilize small and large-unit ethnic contextual variables. However, extant research on Britain largely conforms to the pattern of small unit-large unit divergence in ethno-contextual effects. Jolly and DiGiustio (2009) note that higher non-white population share at the Parliamentary Constituency level, a large geographic unit, predicts greater opposition to immigration. Hopkins (2011), shows that native-born British whites in neighbourhoods with a higher percentage of immigrants and minorities are initially somewhat less opposed to immigration than others, though they may become more susceptible to anti-immigration appeals from political entrepreneurs.

There is also mounting evidence for a disjuncture between local and metro level contexts in research on voting for British anti-immigration parties. The importance of local ethnic contexts as predictors of support for the anti-immigrant British National Party (BNP) has been demonstrated in several studies (John et al. 2006; Bowyer 2008; Ford and Goodwin 2010; Harris 2012). Multi-level analyses of the BNP demonstrate that support is positively stimulated by diversity at the Local Authority (LA) level, a unit typically consisting of between 100,000 and 200,000 people. By contrast, at ward level, with populations approximately a tenth as large as in LAs, diversity exerts a neutral or negative effect on BNP support. In neighbourhoods above a threshold of 25 percent minority population, researchers find reduced white support for the BNP, whereas homogeneous wards and neighbourhoods with few immigrants are more likely to vote for this anti-immigrant party (Biggs and Knauss

2012: 640-2; Bowyer 2008: 617-18).<sup>2</sup> Others point to the combination of homogeneity-within-diversity: heavily white British wards nested in diverse and changing LAs appear to offer fertile ground for the far right (Harris 2012: 188-9). Though only a small minority of white British people who desire less immigration support the BNP, the salience of the immigration issue for BNP supporters suggests the contextual drivers of BNP support may hold for the wider swathe of public opinion as well. We therefore predict that:

H<sub>1</sub> White British respondents in wards with a higher percentage of minorities will be significantly *less* opposed to immigration than those in more homogeneous wards; and

H<sub>2</sub> White British respondents in Local Authorities with a higher percentage of minorities will be significantly *more* opposed to immigration than those in more homogeneous Local Authorities

### Theoretical Perspectives

The debate between contact and threat theory is well-established and sets the overarching framework for our analysis. Allport (1954) advances the argument that positive intergroup contacts improve groups' perceptions of each other, reducing prejudice and social distance. Since then, considerable experimental evidence has confirmed this view (e.g., Barlow et al. 2009; Hewstone et al. 2005). In a meta-analysis of 713 studies, Pettigrew and Tropp (2006) found that contact tended in most cases to significantly reduce intergroup prejudice. The

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<sup>2</sup> Biggs and Knauss (2012) use Output Areas, with populations under 1000, as their measure of locale, whereas Bowyer (2008) and Harris (2012) use wards. In all studies, local diversity is associated with lower, and LA diversity with higher, BNP support.

effect of contact on prejudice reduction operates via improved knowledge, greater empathy and, especially, a reduction in intergroup anxiety (Pettigrew and Tropp 2008; Barlow et al. 2012).<sup>3</sup> Since whites' opportunities for contact with minorities is greater if they encounter diversity in their local area, it should follow that diverse contexts up to the level of the neighbourhood or ward will reduce opposition to minorities, immigrants and immigration. As Schlueter and Scheepers (2010: 293) remark: 'we suggest that, for social contexts smaller than those used in the present study [Dutch municipalities] , the primary impact of minority group size will be an enhancement of opportunities for intergroup contact...In contrast, for relatively large contexts...we consider outgroup size to be...associated with an enhancement of threat perceptions.' We predict that the positive effect of a higher minority presence on majority attitudes will lose potency as geographic scale increases since the likelihood of contact is lower. Thus the balance between threat and contact effects should shift toward the former at higher scales.

Against the contact hypothesis, the threat hypothesis claims the presence of minorities activates a sense of anxiety among members of the ethnic majority. There are two forms of this argument. Realistic threat theory maintains that the presence of a minority group presents an economic or political threat to the majority. In economic terms, minorities may compete for scarce resources or jobs with the majority - often its lower-status members, who experience competition most acutely (Blalock 1967; Olzak 1992; Betz 1994). In political terms, members of the majority may fear minority growth will lead to a power transition in favour of the minority (Toft 2007). Lower-status members of dominant groups (i.e. poor whites in the southern US or South Africa, Oriental Jews in Israel, Irish immigrants in antebellum America, working-class Protestants in Ulster) feel particularly threatened by

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<sup>3</sup> This said, negative contact in intimate contexts has the capacity to lead to rising threat perceptions (Barlow et. al. 2012)

ethnic power and status shifts. This is not simply because of competition at the lower end of the labour market but stems from the fact that for lower-status members of majority groups, their ethnic identity is often their most prestigious, and hence salient, identity (Yiftachel 1999; Roediger 1991).

A broad consensus in the literature suggests that cultural attitudes are more important predictors of individuals' opposition to immigration than egotropic socioeconomic variables (Citrin et al. 1997; Sniderman 2004). Many scholars turn to cultural threat theory to explain majority sensitivity to the presence of minorities. Cultural threats might involve the mere presence of cultural difference, i.e. foreign language and customs, in one's environment, which induces cognitive dissonance (Newman 2012). Alternatively, the presence of minorities may prompt a loss of ontological security in that the taken-for-granted congruence between an individual's territorial and ethnic ecology is irrupted: ethno-territorial boundaries of one's social Self are breached by ethnic difference (Giddens 1991; Skey 2011). Nevertheless, the principal reason why threat theorists expect to find lower white threat responses to diversity at neighbourhood level than at higher geographies is that threatened individuals can readily leave a locale, but find it harder to vacate an entire metropolitan area. In this sense they are acting to maintain ethnic boundaries in the face of immigration, realising Michael Walzer's dictum that 'Neighborhoods can be open only if countries are at least potentially closed...The distinctiveness of cultures and groups depends upon closure and without it cannot be conceived as a stable feature of human life' (Walzer 1983:39).

### Self-Selection and Hydraulic Threat Theory

The chief threat mechanism which links the divergent white responses to minorities at higher and lower geographies is what we term the *hydraulic* theory of minority incursion,

whereby the presence of minorities acts to pressure intolerant whites into disproportionately leaving a ward or neighbourhood. Migration theory tells us that most moves take place over small distances (Crowder and South 2008) for reasons of cost and information, thus those who exit diverse neighbourhoods typically take up residence within the wider metropolitan area, county or, in Britain, Local Authority. This, therefore, would account for a pattern of higher-level opposition and ward-level tolerance. Previous researchers have done the best they can with available data to guard against endogeneity. Where researchers have addressed self-selection, they have typically regressed place of residence on individual values such as conservatism or racial animus (e.g., Ha 2010; Gay 2006; Branton and Jones 2005). Such work typically claims that whites in diverse areas differ from whites in homogeneous areas on the racial attitudes represented by the dependent variable, but not on racial attitudes that are used as instruments for it.

The self-selection tests are, as some authors admit, less than ideal. Such tests employ a restricted number of parameters and depend upon imperfect instruments for the dependent variable. Finally, the reliance on population stock data precludes any consideration of the magnitude and character of white population flows between geographic units which shape the composition of stocks - especially in diverse contexts where population turnover is often high. The ideal test for selective 'white flight' would involve longitudinal data on attitudes. Krysan (2002) asks, 'What are the mechanisms through which racial context operates on thoughts of mobility? Although the optimal approach for answering questions about motivations would be to use longitudinal data that measure both attitudes and behavior at the individual level, these data do not exist.' In a political science context, Abrajano and Hajnal (2009) remark that 'Most studies of contextual effects have been plagued by concerns about selection...Existing studies often try to control for various aspects of this selection but in the end few have been able to solve this fundamental problem. '

Some scholars uncover significant self-selection effects. Oliver and Wong (2003), for example, account for endogeneity in a model of out-group stereotypes by controlling for preferences in neighbourhood ethnic composition. The parameter for white neighbourhood preferences significantly predicted white attitudes, a similar association to that found in the MCSUI (Krysan 2002). Though this did not eliminate the positive effect of local diversity on white attitudes toward outgroups, self-selection effects were considerably larger than contact effects.

Our longitudinal data take us a step further. They permit us to address, for what we believe to be the first time, the methodological difficulties of cross-sectional studies of attitudes toward outgroups, so as to better gauge the extent of self-selection over a twenty-year period. Whites who enter diverse neighbourhoods and those who stay would be predicted to be more tolerant of minorities and immigration than those who depart. Thus if the hydraulic version of threat theory is accurate:

H<sub>3</sub> White British residents who leave diverse wards for whiter wards should be more hostile to immigration than white British people who move into diverse wards; and

H<sub>4</sub> White British residents who leave diverse wards for whiter wards should be more hostile to immigration than white British people who remain in diverse wards

Hydraulic theory depends not only on a white flight effect, but on the volume of self-selection. Only significant replacement of anti-immigration whites with pro-immigration whites can account for the common finding that whites in diverse neighbourhoods, tracts or wards are more tolerant of immigration than those in more homogeneous areas. Yet we know

from a 1% sample of the census (ONS LS 2001) that 6-7 percent of white British people leave diverse wards of England and Wales each year, that is, between 900 and 1050 individuals in a ward containing 15,000 whites. Given this figure, it would take 14-16 years for the attitudinal composition of the white population stock of a diverse ward to match the white inflow.<sup>4</sup> The volume of white population turnover in diverse neighbourhoods in England and Wales is thus large enough for selective white migration to account for the relatively pro-immigration attitudes of white British people in wards with a large minority presence. On the other hand, should we find that whites departing an area of minority concentration manifest similar or more liberal views on immigration compared to whites who remain or enter, the hydraulic threat hypothesis fails and contact theory may offer the best explanation.

## Data

We use a number of data sources for this study. The Citizenship Surveys sample approximately 15,000 respondents per year - 5,000 from minority groups and 10,000 whites (Office for National Statistics and Home Office 2011; Office for National Statistics and Home Office 2010). The survey was conducted biennially or annually in England and Wales between 2001 and 2011. We have recontacted the survey firms and obtained ward-level geocoded data for the 2009-10 and 2010-11 surveys. Other years are not available at the geographic scale we require.<sup>5</sup> The pooled 2-year sample yields approximately 16,000 white

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<sup>4</sup> Unless we had reason to believe that those who did not participate in this churn had a particular attitudinal profile. Complete calculations at: supplemental files website.

<sup>5</sup> We thank Ipsos-Mori for permitting us to access ward-level data for the 2009-10 and 2010-11 surveys which makes multi-level analysis possible. Geocoded data for the 2007-8 and 2008-9 surveys has been purchased from NatCen, but NatCen only permit a very coarse banding at the contextual level, which militates against multi-level analysis.

British respondents, our target group. The survey is rich in questions pertaining to attitudes toward immigration and ethnic relations.

In order to measure the attitudinal profile of white British incomers, outmigrants and stayers in diverse British wards, we use the British Household Panel Survey (BHPS 2010) and its successor, Understanding Society. The BHPS is an annual longitudinal study of some 5,500 households containing 10,300 individuals in England and Wales, which began in 1991. Attrition of cases reached 11 percent in the transition from waves 1 to 2, but since then recontact rates have remained high, generally well above 95 percent. In 2009, the survey merged into the Understanding Society longitudinal survey (UKHLS 2012) which connects with the BHPS sample. We use linearly interpolated 1991, 2001 and 2011 ward-level census data from the Office of National Statistics which is attached to individual survey records in the Citizenship Survey and BHPS-UKHLS. We use a common 2001 ward geography to link census data across the three waves.<sup>6</sup>

While similar to the Panel Study of Income Dynamics (PSID) in the United States, the BHPS contains modules covering a wider array of subjective measures. Party vote, political participation, political attitudes, reasons for moving, perceptions of neighbourhood, national identity and newspaper readership are included in at least some survey waves. This permits a fuller examination of the cultural and political subjectivity of whites who leave, enter and remain in diverse areas, enabling us to generate a twenty-year profile of white incomers to, outmigrants from, and stayers in, diverse wards. Our BHPS-UKHLS sample consists of 172,200 white UK-born person-years of data for 1991-2012 across nineteen survey waves. Wave size varies between 6684 and 10,218 for the 18 waves of the BHPS, with 25277 for the

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<sup>6</sup> Potential problems associated with changes in ward boundaries between the 1991 and 2001 censuses are mitigated by our use of GeoConvert software (<http://geoconvert.mimas.ac.uk/>, accessed July 2, 2013). To arrive at common 2001-2011 wards, we build wards up from a common geography based on Middle Layer Super Output Areas.

nineteenth wave (the first wave of the UKHLS) which contains a subsample of 7,000 individuals linked to the BHPS. Note that the addition of wave 19 is not problematic insofar as our study is not dependent on directly utilizing the panel structure of the BHPS. Rather our aim is to maximize sample size by focusing on person-years as the unit of analysis in order to generate sufficient cases (nearly 200,000) to amass a large enough target sample (N=3926) of white UK-born individuals who moved to more or less diverse quintiles of wards in the year since the preceding wave.<sup>7</sup>

## Method

Dependent Variable: The dependent variable for this study is the Citizenship Survey question, 'Do you think the number of immigrants coming to Britain nowadays should be changed?' Answers follow a 5-category ordinal scale: 'increased a lot', 'increased a little', 'stay the same', 'decreased a little,' 'decreased a lot.' This variable is far from normally distributed, with a heavy slant toward reduction. Thus it has been recoded as two distinct dependent variables. The first is a binary reduce/do not reduce dummy variable which groups the roughly 81 percent of whites who desire a reduction into one category (1), and those favouring the same or more immigration (0) into a second. A second formulation isolates a dummy variable in which the approximately 60 percent of whites who desire that immigration be reduced 'a lot' are coded 1 and others 0. The analysis is restricted to white, UK-born residents.<sup>8</sup>

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<sup>7</sup> Those born abroad, and subjects living in Scotland or Northern Ireland, are excluded, to most closely approximate the ethnic majority group in England and Wales.

<sup>8</sup> There is no ethnicity question in the BHPS which permits the isolation of UK-born white respondents who are not of English or Welsh ethnic identity (i.e. Jewish, Irish, Polish). However, UK-born white Other is a minimal category outside London and many whites of Irish background now identify on the census as white British. Again, as the 2011 census

### Independent variables:

We test a variety of individual-level parameters. Demographic and economic variables include age, marital status, sex, income, education, occupational class - manager/professional, middle, lower supervisory, working, unemployed/never worked; student, length of residence in neighbourhood - ten or more years versus less; employed or not, accommodation type (renter, owner, council tenant), number of children under 18. Attitudinal items include general trust (recoded as a yes/no dummy), importance of national identity for self-identity and importance of occupation for self-identity (both recoded as yes/no dummy variables). We also include dummy variables for broadsheet and tabloid newspaper readership as these are often associated with distinct views on immigration. We use the following questions pertaining to bridging ties. First, 'What proportion of your friends are of the same ethnic group as you?' - 'all the same, more than half, about half, less than half.' Second, we create a combined mixing scale from nine variables based on the question 'How often, if at all, have you mixed socially with people from different ethnic and religious groups to yourself' - daily, weekly, monthly, at least once a year, less often than once a year, never, don't know. The component variables concern different locations from one's home to more anonymous settings like shops and public buildings.<sup>9</sup> We did not find a consistent

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revealed, London is an exception, so a dummy variable for London captures much of this effect.

<sup>9</sup> The inter-ethnic mixing scale was composed of 9 variables and reported a Cronbachs Alpha of 0.82. The 9-item scale was tested in a factor analysis and reported one factor with an eigenvalue of 3.2 which explained 71.2% of the total variance. The second factor achieved an eigen score of 0.41 supporting the decision to employ a one-dimensional scale. This indicates a strong link between an individual's degree of intimate (i.e. home) and anonymous (i.e. shops, public buildings) mixing.

pattern whereby certain forms of mixing were stronger predictors than others so opted for a combined scale.<sup>10</sup>

Contextual parameters are drawn from the 2011 census except where noted. These include the proportion of ward of residence comprised of: ethnic minorities; immigrants who have been in the country less than ten years; and the rate of minority increase in the ward since 2001. We consider the Carstairs Index of Multiple Deprivation<sup>11</sup> - a measure of the poverty or affluence of an area, as well as proportions who moved in the previous year (2001 data)<sup>12</sup>, share of private renters, and share of singles. We also consider minority and immigrant share at Local Authority level and include a dummy variable for London. As a robustness check we repeat the entire ward-level analysis with the same contextual variables at a lower-level geography, the Middle Layer Super Output Area (MSOA), a unit with an average population of 7,200 persons and thereby most analogous to the American census tract.

Given the annual sample size of approximately 10,000 individuals in the Citizenship Surveys and BHPS-UKHLS (even as person years exceeds 172,000), many of the over 8800 wards of England and Wales have little or no representation in these surveys. Therefore we group wards by diversity, building on the strategy of Simpson (2007) and Simpson and Finney (2010), in which wards in England and Wales are allocated to five quintiles, each containing a fifth of the minority population (see table 2). These are arrayed from the quintile with the highest minority-share (102 of 8850 wards in 2001, 166 of 8571 wards in 2011) to

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<sup>10</sup> See Appendix I in supplemental files website for further details.

<sup>11</sup> The Carstairs index of multiple deprivation, developed by Paul Norman, is an index of four components from the census. Namely, share of: residents without cars, male unemployed, low status occupational groups, overcrowded households. For methodology of Carstairs Index, see <http://cdu.mimas.ac.uk/related/deprivation.htm> (accessed March 17, 2013).

<sup>12</sup> As of writing, 2011 one-year migration data have not been released by the Office of National Statistics.

the lowest minority-share quintile (7554 of 8850 wards in 2001, 6722 wards in 2011).<sup>13</sup>

Those who move wards within a diversity quintile are deemed to be non-movers for the purposes of this study. Those who move from low quintiles to higher ones are treated as movers toward diversity, and those who move the other way are considered movers from diversity - as shown by the arrows in table 2.

[Table 2 here]

## Results

To simultaneously model the effect of individual and contextual characteristics on attitudes to immigration, we use a random effects linear hierarchical model (Hox 2002; Rabe-Hesketh and Skrondal 2012).<sup>14</sup> This three-level random-intercept design enables us to model non-independence between respondents within the same geographical unit, and to model heterogeneity in attitudes to immigration at the ward and Local Authority level.<sup>15</sup> The equation states that, for respondent  $i$  who lives in ward  $j$  in district  $k$ , the value of the outcome variable ( $Y_{ijk}$ ) equals the sum of the intercept for ward  $j$  in district  $k$  ( $\beta_{0jk}$ ), the product of the vector of  $p$  individual level coefficients ( $\beta_p$ ), the values of the individual level independent variables ( $X_{pijk}$ ), and an error term ( $e_{ijk}$ ) unique to the respondent.

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<sup>13</sup> Note that a marked increase in ethnic minority population from 4.5 million in 2001 to 10.1 million in 2011 as well as its diffusion accounts for the notable difference in white share within each quintile between the two years.

<sup>14</sup> MLwiN software was used for the Multi-Level modeling, supplied by the Centre for Multi-level Modeling at Bristol University

<sup>15</sup> The random intercept model assumes that the effects of the individual-level variables are fixed across level 2 and level 3 units. The average level of opposition to immigration was allowed to vary across level 2 (wards) and level 3 (Local Authorities) units. A random coefficient model was specified but found to be statistically insignificant.

$$Y_{ijk} = \beta_{0jk} + \beta_p X_{pijk} + e_{ijk}$$

Results for five models, with robust standard errors, are reported in Table 3.

[Table 3 here]

The coefficients on our individual-level predictors in model 1 in the table reinforce general findings from the literature in terms of education and class, though the coefficient for lower supervisory class is stronger than working class across all equations. Singles are less opposed to current or higher levels of immigration than married couples, and renters less opposed than homeowners and council tenants. Long-term residents who have lived in the same (subjectively defined) neighbourhood for ten years or more are more likely to favour a reduced intake than those resident for fewer years. Notice that several of these variables tap aspects of the transience-rootedness antinomy, in which the more transient are more tolerant. Sex (not shown) and, interestingly, age, do not emerge as consistently significant in this and most other models in table 3. Though younger people are sometimes found to be more tolerant of immigration in the literature, this is not true here except insofar as older people are more likely than younger respondents to call for reducing immigration 'a lot' (see model 5).

Model 2 introduces ward-level contextual variables. The proportion of ethnic minorities in the individual's ward of residence dramatically washes out the importance of the London dummy variable. This is because London's wards are more diverse, on average, than

those in the rest of the country. Results confirm that the percentage of ethnic minorities in an individual's ward of residence is negatively associated with their log odds of favouring reduced levels of immigration. The share of immigrants who have lived in the UK for less than ten years has a 95 percent correlation with the proportion of minorities (white immigrants are often located in minority wards) and has a similar coefficient when substituted in the model. Ethnically diverse wards tend to be urban and deprived, but our results are robust to controls for ward-level population density and the Carstairs Index of Multiple Deprivation. These contextual variables have disparate effects: whites in deprived wards are more opposed, and whites in dense wards less opposed, to immigration. Taken at once, our contextual variables reveal that opposition to immigration is significantly higher in more homogeneously white wards than in diverse ones. The same holds when the analysis is rerun using MSOAs as the contextual unit.<sup>16</sup> All told, these results offer powerful confirmation of H<sub>1</sub>.

Model 3 adds a second geographic layer, that of the Local Authority (population generally 100-200,000), to the analysis. The coefficient for the percentage of minorities at Local Authority level is signed in a positive direction - the opposite of ward level - and is significant, confirming H<sub>2</sub>. This is an important result. The same holds at MSOA level.<sup>17</sup> These relationships largely continue to hold as we add a richer set of individual-level attitudinal predictors, in model 4. English (but not British) national identity, being strongly attached to national identity, reading a tabloid newspaper and having low levels of general trust increase opposition to immigration. Broadsheet newspaper readers are more supportive of immigration.

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<sup>16</sup> MSOA model results at supplemental files website.

<sup>17</sup> See supplemental files website.

A growing literature on the effects of diversity on trust and toleration finds that bridging ties mediate the effects of diversity on toleration (Laurence 2011: 83 ; Pettigrew et al. 2010: 645; Schlueter and Scheepers 2010: 291; Semyonov and Glikman 2009: 702). When, in model 4, we insert variables for the extent to which an individual mixes with ethnic minorities or has friends from other ethnic groups, the coefficient for ward ethnic diversity weakens from  $-.017$  to  $-.009$ , indicating the prevalence of a contact effect: a larger share of minorities offers greater opportunity for contact and controlling for this weakens the contribution of ward minority share to the model. This does not, however, remove it entirely.

As we see in model 5, a transience parameter (the share of ward residents who moved during 2000-2001) is significant and removes ward minority share from the model entirely. The share of singles, an alternative measure of transience, was nearly as powerful. This indicates that living in a transient context exerts an independent effect on attitudes over and above one's individual mobility status. It also suggests ward diversity shapes white attitudes through a combination of contact and transience effects. Since diversity and transience of context overlap, a model which fails to include a control for population turnover will report a larger coefficient for diversity on attitudes to immigration.<sup>18</sup> Though the introduction of a transience term into the model removed the significance of ward diversity, LA-level diversity remained significant. Variables measuring bridging ties continued to predict less hostility to immigration.

Finally, in model 6, which compares those who seek to reduce immigration 'a lot' with respondents who desire modest reductions, current levels or an increase, we see the Local Authority (LA) minority share variable lose significance while bridging ties gains slightly in power. Transience measures remain highly significant. These results are robust to a number of different specifications, including the introduction of interaction effects between bridging

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<sup>18</sup> For a similar finding for attitudes to immigrants, using similar data, see Laurence 2013.

ties and contextual variables which reach significance in other studies but fail to enter our model.<sup>19</sup> A term capturing residence in London shows that white UK-born Londoners are more tolerant of immigration than other UK whites in (the full) model 5. Results are similar when MSOA-level contextual variables are substituted for those at ward level.<sup>20</sup>

It can be difficult to interpret coefficients in a logistic regression. In order to evaluate the relative power of contact and transience, we graph the predicted probabilities of a white respondent favouring a reduction in immigration holding other variables at their means. Figure 1 displays the predicted probabilities against the nested means<sup>21</sup> of population churn and ward minority share (model 3 with churn added). As we move from a median individual in a ward in the most homogeneous category to a ward in the most diverse one, their predicted probability of opposing current immigration levels declines from 80.3 to 70.4 per cent. As we move from the least to the most transient group of wards, the median individual shifts from 79.3 to 73.8 per cent opposed. The slope for minority share is somewhat steeper than that for transience, suggesting that diversity-driven contact effects are somewhat more important than transience in explaining reduced hostility to immigration.

[Figure 1 here]

Turning to model 5, if we hold all other variables at their means, the probability of a white British individual favouring reduced immigration levels declines from 84 to 83 percent as we

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<sup>19</sup> These include the interaction of ward diversity with bridging ties and with socioeconomic measures at individual and ward level; the use of immigrant share instead of minority share, as well as the introduction of parameters for minority changes alongside levels.

<sup>20</sup> MSOA model results at supplemental files website.

<sup>21</sup> Nested means are a way of dividing a numerical variable into groups. The division of the variable into eight groups as performed here is similar to taking the 12.5<sup>th</sup>, 25<sup>th</sup>, 37.5<sup>th</sup>, 50<sup>th</sup>, 62.5<sup>th</sup> and 75<sup>th</sup> percentile but uses the mean instead of the median.

shift from the least to the most diverse ward. By contrast, as we transition from the most homogeneous Local Authority to the most diverse one, the probability of an individual favouring less immigration rises from 81.5 to 86 percent. This reinforces the findings from our meta analysis in table 1: contextual effects reverse themselves as we alter the level of geographic analysis. Yet none of this is decisive for theory: this pattern is in keeping with *both* contact theory and the hydraulic version of threat theory. In order to adjudicate between the two, we need to move beyond cross-sectional data to examine the character of white population flows over time at ward level using the BHPS-UKHLS.

### Tests for Self-Selection

To test for self-selection, we examine individuals who move from high minority-share quintiles of wards to whiter quintiles, and vice-versa. Note in table 2 that there are many more wards (and therefore white Britons) in homogeneous quintile 1 than in all other quintiles combined. Since some wards shift quintile over time due to relative *in situ* ethnic shifts, we record only those who simultaneously move ward and record a shift in quintile of residence. As with the previous analysis, we use a constant geography based on 2001 boundaries and interpolate ethnic data between 1991 and 2011 in order to arrive at an appropriate ward quintile for each person-year in the data.

The combined BHPS-UKHLS for 1991-2012 yields a total of 172,200 person-years of data on white UK-born British people, as shown in table 4. Of these, 156,779, 91 percent of the sample, did not move in the previous year. Even among movers, a further 2953 individuals moved within ward. This means only 7.2 percent of the sample moved between wards in the previous year. Note that this figure is in person-years, therefore the share of individuals in the survey who moved at least once would be considerably higher - especially

among individuals who survived the nineteen waves of the survey (thereby leaving a nineteen person-year footprint each in the data). Our BHPS-UKHLS figure compares well to census figures. The 2001 census finds that 40,614 individuals in a 1 percent sample of the census (526,458 persons) moved into their ward during the year 2000-2001 from another ward (ONS LS 2001). This represents 7.7 percent of the sample, analogous to our 7.2 percent annual movers.

A further question concerns the diversity of wards. Of the 7.2 percent of person-years where an inter-ward move was recorded, the move took place within the same diversity quintile in 8542 (69% of) instances. The typical move is between two homogeneous wards in quintile 1. Our focus therefore falls on the 2095 white moves away from diverse wards and the 1831 white moves towards diversity. These 3926 person-years represent about 2 percent of the BHPS-UKHLS sample. Notice that this dataset - among the longest running longitudinal surveys in the world - underpins our contribution to knowledge: without a longitudinal structure to the data, we could not determine moves to and from diversity. In the absence of a large enough sample we could not amass sufficient cases for meaningful analysis of white movers in diverse wards. Note as well that among stayers, some found themselves in wards which shifted quintile in a given year due to area ethnic change.

[Table 4 here]

The BHPS-UKHLS permits us to observe the demographic, socioeconomic and attitudinal characteristics of movers. In an ideal world, the dataset would ask a question on attitudes to immigration. The longitudinal surveys do not, but records a series of items that are well-

known predictors of immigration attitudes - some in each wave, some only occasionally. These include modules on political and moral attitudes, voting behaviour, national identity, newspaper readership, age, education and class which have been found to directly predict immigration attitudes in the literature (Fetzer 2000). We see many of these predictors in our models in table 3. On attitudinal items that were asked intermittently in the BHPS, between-respondent variation was overwhelmingly dominant over within-variation thus we felt we could safely interpolate attitudes within individuals across all waves of the survey based on answers recorded in available years.<sup>22</sup> This technique allowed us to minimize listwise deletion while generating a wider array of applicable proxy questions for attitudes to immigration. However, for reference, variables that have been interpolated in this way are starred in table 5. Table 5 displays four columns of data: the characteristics of movers toward diversity, away from diversity, stayers in diverse wards and movers from wards in quintiles 2-5 to wards in quintile 1.<sup>23</sup>

[Table 5 here]

The first point to notice is the broad similarity in attitudes and demographic characteristics between those who move toward diversity ('gentrifiers'), and those who move away from it ('white flight'). On most of the subjective items that typically correlate with opposition to immigration - conservative voting, patriotism, English (as opposed to British) national identity, conservative views on women's roles and homosexuality - the differences are small,

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<sup>22</sup> The analysis was repeated on the un-interpolated variables and the significant differences ran with the same magnitude and direction.

<sup>23</sup> Note that columns 1 and 2 measure inter-quartile shifts (i.e. 3 to 4 or 3 to 2) whereas columns 3 and 4 collapse all data into two halves (quintile 1 vs. quintiles 2-5), so the number of moves is much smaller in column 4 than in columns 2.

even if those leaving diversity are slightly more conservative than those moving towards it. The main differences, highlighted in bold, concern age and housing tenure, with more current renters having moved toward diversity and more homeowners among those who moved away from it. This is because diverse locales tend to be high density, with a larger proportion of rental accommodation than in homogeneous wards.

In our Citizenship Survey data, the average level of white support for reducing immigration is 81 percent in the most homogeneous wards (quintile 1) and 71 percent in diverse (quintiles 2- 5) wards. In order for a selection effect to operate, we would therefore expect to see a 10-point (81 minus 71) difference in relevant attitudes and sociodemographic characteristics between those moving away from diverse wards and those who stay in them or move into them over two decades. Comparing movers from ('white flight') and towards ('gentrification') diversity in columns 1 and 2, we find some attitudinal differences between the two flows in the expected direction. Yet these are generally less than five percentage points, offering only limited evidence for  $H_3$ , well below the level required to account for a selection effect.

The appreciable gap in the proportion of 18-25 year-olds (nearly 15 percent) or renters (20-25 percent) between columns 1 and 2 in table 5 could be cited as partial evidence for  $H_3$  since the young and renters are more tolerant of immigration on some measures. This appears less convincing when we compare stayers in diverse wards (quintiles 2-5) in column 3 with those who moved from these wards to the homogeneously white wards of quintile 1 (column 4). Whereas hydraulic threat theory predicts the intolerant self-select from diversity while the tolerant remain behind ( $H_4$ ), the data clearly refutes this hypothesis. On most relevant attitudes, stayers (column 3) are indistinguishable from, or more conservative than, 'white fleers' (column 4) - though we must treat the data with some caution due to the small sample in column 4. The older, more established profile of stayers in diverse areas helps

explain their substantially more traditional positions on homosexuality and gender roles. The observation that white stayers in diverse neighbourhoods are more conservative than those who move is corroborated by a Swedish study in a diverse neighbourhood which asked approximately 750 white Swedish stayers and 750 outmovers about their neighbourhood preferences. Outmovers were slightly more likely than stayers to say 'I prefer an ethnically mixed neighbourhood' and considerably less likely to agree with the statement, 'I do not want to live close to certain ethnic groups' (Hedman and Holmqvist 2012). Both of our datasets suggest the most important attitudinal differences are between stayers (column 3) and movers (columns 1,2) in general rather than between those leaving diversity (column 1) and those moving towards it (column 2).

As a robustness check, we commissioned a YouGov political tracker survey of 1869 British adults which contains both immigration-proxy items from the BHPS-UKHLS such as party vote and national identity, and direct questions on race and immigration similar to the Citizenship Surveys.<sup>24</sup> Of the 1638 white British respondents, 906 claimed not to have moved wards over the past decade, 384 said they had moved wards, while the rest were unsure. Comparing white British stayers with those who reported they had moved to less or more diverse wards, table 6 reveals a pattern identical to that in table 5 which shows continuity between immigration and race-proxy variables from BHPS-UKHLS and race/immigration attitude measures. Namely, that white stayers are more conservative than those engaging in 'white flight' while even among movers, the scale of the opinion divide between white 'fleers' and 'gentrifiers', at 2 to 7 points, falls well short of the ten points required to support H<sup>3</sup>. Moreover, related work with this data suggests immigration attitudes are not significantly

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<sup>24</sup> For details on YouGov survey methodology and questionnaire, see supplemental files website.

associated with moves to/from diversity when demographic and socioeconomic variables are included in the model.<sup>25</sup>

[table 6 here]

The findings in table 6, which show stayers to be most conservative, reinforce the results of the model in table 3 where we discovered that transience is an important predictor of a more open attitude to immigration. It also echoes work on the British National Party which finds support for the party to be strongest in wards with limited white inflows and outflows, that is, with a high proportion of stayers (Harris 2012). At the 2008 Greater London Authority elections, when support for the British National Party was at its peak, wards that received a large amount of 'white flight' were actually less supportive of the BNP. All of which casts considerable doubt on H<sub>4</sub>.

## Discussion

Our analysis of white British immigration attitudes echoes the majority of American and European contextual studies: diversity in large geographic contexts such as county or metropolitan area predicts greater opposition to immigration among whites while diversity at low levels of geography such as ward or tract is associated with reduced opposition. Is this pattern best explained by the fact there are more opportunities for contact at lower rather than

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<sup>25</sup> Our work with the BHPS-UKHLS and YouGov survey using move toward/away from diversity as the dependent variable finds white immigration or immigration-proxy attitudes not to be significant predictors. For more, see supplemental files website.

higher geographies? Or is it a byproduct of 'white flight': the self-selection of intolerant whites out, and tolerant whites in, to diverse locales.

Research on the effects of local diversity on public opinion has been hampered by the lack of longitudinal data with which to test for attitudinal self-selection. The validity of work on the role of racial context in activating threat perceptions or facilitating positive contacts with minorities hinges on whether self-selection can be satisfactorily addressed. This analysis, which uses a large-scale, twenty-year longitudinal study geocoded to low geographic levels, addresses this concern. It helps validate previous contextual work by demonstrating that self-selection is not a convincing explanation for positive white attitudes to immigration in diverse local contexts in Britain. This said, our research does not offer a simple refutation of threat theory and unequivocal support for the contact hypothesis. We find support for contact theory in that whites who live in diverse areas have more ties to minorities, and those with more inter-ethnic ties are less hostile to immigration. However, transience, at both individual and contextual levels, is nearly as important as contact in explaining the more positive white attitudes to immigration found in diverse locales.

How generalizable are such findings? Dutch replications of the MCSUI study suggests the relationship between white residential preferences and attitudes to minorities in the Netherlands and America are quite similar (van Londen 2012). Moreover, European and American research shows that ethnic context has broadly similar effects on white immigration attitudes on both sides of the Atlantic (Semyonov and Glikman 2009). Given these similarities, our work should be generalizable to the American case even if data do not yet exist to replicate our longitudinal study. Future American research could begin with

surveys linking attitudes to retrospective mobility data, which could be used to externally validate some of the results reported here.<sup>26</sup>

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<sup>26</sup> See table 6.

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Table 1. Meta-Analysis of Ethnic Context Literature

Context	Study		Context	Study	
Prison cells	Trulson & Marquart 2002	-	British Local Authorities	Bowyer 2008; Ford & Goodwin 2010; Biggs & Knauss 2012; Harris 2012	+
Block Groups, Municipalities	Baybeck 2006; Hjerm 2009	+ / -	French Departments	Mayer 1995; Kitschelt 1995	+
	Rink et al. 2009	= / -	US Counties	Key 1949; Blalock 1957; Reed 1972; Wright 1976; Giles & Evans 1986; Glaser 1994; Stein et al 2000; Eitle et al 2002; Branton & Jones 2005; Hopkins 2011; Rocha et. al. 2011	+
	Lubbers et. al. 2006; Rydgren & Ruth 2011; Biggs & Knauss 2012	-		Hood & Morris 1997; Hood & Morris 2000; Morris 2000	-
Perceived neighbourhood	Surace & Seeman 1967; Robinson 1980; Sigelman & Welch 1993; Mayer 1995; Kitschelt 1996; Yancey 1999	-		Corzine et al 1983; Dixon 2006; Newman and Johnson 2012	+ / -
	Quillian 1995	+		Campbell et. al. 2006	=
Housing projects	Ford 1973	-	Louisiana Parishes	Giles & Buckner 1993; Giles & Hertz 1994; Voss 1996	+
US Census Tracts	Wilson 1979; Hajnal et. al 2011	+	Metropolitan areas	Fossett & Kiecolt 1989; Taylor 1998; Arp et al. 1999; Jacobs & Carmichael 2001; Jacobs & Carmichael 2002; Dixon 2006; Rocha & Espino 2009	+
	Oliver & Wong 2003; Ha 2010	-		Ha 2010	+ / -
British MSOAs	Laurence 2013	-	Countries	Quillian 1995; Lubbers & Scheepers 2001; Lubbers & Scheepers 2002; Semyonov et al. 2006; Schneider 2008; Semyonov & Glikman 2009	+
Tract & locale	Welch et al. 2001	-		Citrin & Sides 2008	=
British Wards	Bowyer 2008; Harris 2012	-			
Zip codes	Emerson at. al. 2001; Gilliam et. al. 2002	-			
Precincts/ Boroughs	Carsey 1995	-			

Note: '+' denotes a positive relationship between minority/immigrant share and hostility to outgroups/immigration (i.e. threat response); '-' denotes a negative (contact response) and '=' a neutral relationship. For list of references in chart, see [www.sneps.net/13apsrsupplemental.htm](http://www.sneps.net/13apsrsupplemental.htm).

Table 2. Wards by Quintile and 2001 and 2011 Census

	Wards 2001	% White 2001	Wards 2011	% White 2011
Whitest Quintile 1	7554	98	6722	94
Quintile 2	726	87	1029	79
Quintile 3	288	73	406	58
Quintile 4	180	57	248	40
Least White Quintile 5	102	33	166	21
Total	8850	88	8571	82

Selection toward  
diversity

Selection away  
from diversity

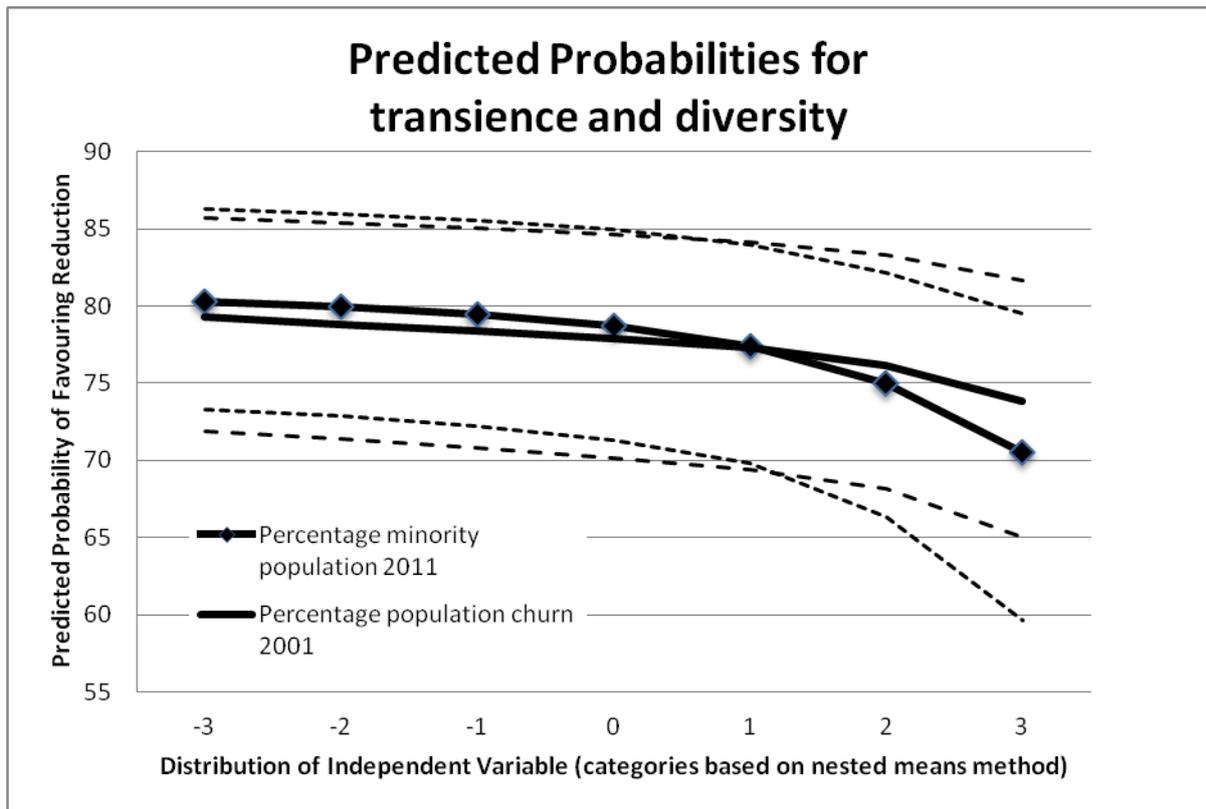
Source: Simpson 2007; ONS 2013. Note: ward totals lower in 2011 due to some consolidation of wards. Note: To allow comparison the 2011 census data has been converted to 2001 frozen ward boundaries, 79 wards were lost in the process.

Table 3. Multi-level regression on desire to reduce immigration

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Income	-.041 (.008) ***	-.040 (.009) ***	-.041 (.009) ***	-.012 (.009)	-.011 (.051)	-.002 (.008)
No qualifications	.357 (.071) ***	.363 (.076) ***	.376 (.077) ***	.183 (.079) *	.183 (.079)	.276 (.059) ***
Middle class (ref: upper class)	.413 (.063) ***	.415 (.066) ***	.413 (.067) ***	.224 (.069) **	.22 (.069)**	.285 (.056) ***
Lower supervisory class (ref: upper class)	.713 (.089) ***	.703 (.095) ***	.701 (.096) ***	.398 (.099) ***	.396 (.099) ***	.423 (.073) ***
Working class (ref: upper class)	.475 (.065) ***	.446 (.069) ***	.45 (.07) ***	.117 (.074)	.116 (.074)	.234 (.059) ***
Private renter (ref: home owner)	-.195 (.071) **	-.144 (.076)	-.147 (.076)	-.164 (.079) *	-.144 (.079)	.016 (.067)
Age	.003 (.001) **	.003 (.002)	.003 (.002)	-.004 (.002) *	-.004 (.002) *	.004 (.001) ***
London (ref: all other regions)	-.616 (.076) ***	-.028 (.12)	-.197 (.148)	-.205 (.146)	-.26 (.146)	-.338 (.13) **
Resident over 10 years (ref: less than 10 years)	.127 (.048) **	.129 (.051) *	.119 (.052) *	.08 (.053)	.071 (.053)	.057 (.044)
Couple (ref: single)	.171 (.047)	.157 (.05) **	.154 (.05) **	.145 (.052) **	.144 (.052)**	.152 (.042) ***
All friends are from the same ethnic group				.345 (.054) ***	.344 (.054) ***	.406 (.043) ***
Frequency of mixing with other ethnic groups				-.024 (.003) ***	-.024 (.003) ***	-.026 (.002) ***
English national identifier				.257 (.08) **	.259 (.079) **	.287 (.065) ***
Tabloid newspaper (ref: all other news sources)				.568 (.054) ***	.562 (.054) ***	.526 (.041) ***
Importance of nation to self-identity				.626 (.058) ***	.623 (.058) ***	.475 (.053) ***
Do not trust people in general				.619 (.051) ***	.617 (.051) ***	.600 (.040) ***
Ward: minority share of population		-.011 (.002) ***	-.017 (.003) ***	-.009 (.003) **	-.006 (.003)	-.003 (.003)
Ward: Carstairs Index of Multiple Deprivation		.045 (.011) ***	.049 (.011) ***	.016 (.011)	.013 (.011)	.028 (.009) **
Ward: population density		-.007 (.001) ***	-.007 (.001) ***	-.005 (.001) ***	-.004 (.001) ***	.002 (.001)
Ward: population churn					-.018 (.006) **	-.018 (.006) **
Local Authority: minority share of population			.011 (.004) **	.01 (.004) **	.004 (.003)	-.003 (.003)
<i>Random effects</i>						
Variance Intercept ward		.2 (.035) ***	.148 (.037) ***	.131 (.038) ***	.133 (.038) ***	.097 (.026) ***
Variance intercept Local Authority			.049 (.021) **	.035 (.02)	.032 (.02)	.031 (.014) *
N		14145	13616	13436	13436	13436

Table entries are logged odds with robust standard errors, clustered by ward (N=1709) and Local Authority (N=364). \*p<.05, \*\*p<.01, \*\*\*p<.001.

Figure 1.



Note: Dotted lines represent 95% confidence intervals for predicted variable.

Table 4 Aggregate White Population Flows from BHPS-Understanding Society, 1991-2012  
(person-years)

White mover status	Change in diversity			Total	Share
	Same	Less	More		
White stayer	153567	1534	1678	156779	91.0%
White inter-ward mover	8542	2095	1831	12468	7.2%
White intra-ward mover	2879	33	41	2953	1.7%
Total	164988	3662	3550	172200	10.0%

Source: BHPS 1991-2008; Understanding Society 2009-12.

Table 5. Characteristics (in %) of White UK-born Sample, by Mobility Status, 1991-2012 (person-years)

	<b>Movers from Diversity</b>	<b>Movers to Diversity</b>	<b>Stayers in Diverse Quintiles 2-5</b>	<b>Movers from Diverse Quintiles 2-5 to Quintile 1</b>
University Degree	31.0	27.8	19.3	23.1
Manager & Professional	27.8	23.1	24.0	14.5
Middle class	50.0	46.8	41.6	54.7
Working class	18.9	19.1	26.7	22.8
Own account worker	3.7	3.9	5.5	1.6
Conservative	25.4	24.7	32.9	30.4
Labour	40	36.3	47.2	43.0
Liberal	19.3	16.8	15.0	21.1
Single	<b>41.9</b>	<b>55.9</b>	<b>34.0</b>	<b>55.0</b>
English identifier*	56.1	55.2	58.8 ‡	56.7 ‡
British identifier*	69.0	68.5	70.0 ‡	72.6 ‡
Tabloid*	66	64.8	73.8 ‡	71.4 ‡
Broadsheet*	33.9	35.2	26.2 ‡	28.6 ‡
17-25	<b>34.4</b>	<b>47.5</b>	<b>10.7</b>	<b>60.4</b>
65+	5.6	4.0	<b>20.5</b>	<b>0.0</b>
Private renter	<b>29.8</b>	<b>52.6</b>	<b>7.6</b>	<b>66.1</b>
Homeowner	<b>58.0</b>	<b>35.8</b>	<b>71.0</b>	<b>21.8</b>
Have children	<b>24.8</b>	<b>17.9</b>	<b>29.3</b>	<b>14.6</b>
Cohabitation wrong* (agree)	12.1	11.5	<b>22.7</b>	<b>9.5</b>
Homosexuality wrong* (agree)	22.0	18.7	<b>32.6</b>	<b>21.2</b>
Husband should be breadwinner* (agree)	28.1	23.6	<b>37.0</b>	<b>8.1</b>
British citizenship best* (agree)	74.0 ‡	73.4 ‡	<b>83.0</b>	<b>73.2</b>
Highest income quintile	22.1	18.9	23.1	15.8
Lowest income quintile	<b>22.4</b>	<b>29.5</b>	<b>17.0</b>	<b>36.1</b>
N	2095	1831	32530	376

Source: BHPS 1991-2008; Understanding Society 2009-12. Note: 'Movers' refers to those who moved wards. Relatively large inter-column differences are highlighted. \* Indicates a variable interpolated across all years within an individual. All figures are statistically significant except where (‡) noted.

Table 6. Characteristics (in %) of White British Survey Sample, by Self-Reported Mobility Status, 2013

	<b>Movers from Diversity</b>	<b>Movers to Diversity</b>	<b>Stayer</b>
Immigration: Increase or same	23%	25%	17%
Immigration: reduce a little	16%	21%	19%
Immigration: reduce a lot	60%	54%	64%
N	146	89	906
<b>English Identity</b>			
English Identity	43%	40%	50%
Conservative Party	28%	25%	28%
N	148	91	927
<b>Discomfort Interracial Marriage</b>			
Discomfort Interracial Marriage	21%	14%	23%
N	139	83	903

Source: Yougov survey, August 2013. N = 1638 white British adults. Note that number of cases is slightly different for different groups of variables depending on response rate.

## Supplemental Notes for APSR submission

### 1) References for Table 1.

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## 2) Calculations for years required for population stock in diverse wards to match flow:

There is considerable population turnover in many UK metropolitan neighbourhoods. British wards with an overrepresentation of minorities are often deprived and urban, and tend to lose the young and upwardly-mobile at accelerated rates (Simpson and Finney 2010). For example, in the census, just 1.1 percent of white British residents in the 7554 wards that averaged 98% white in 2001 moved out of ward in 2000-1 whereas 6-7 percent of white British residents in the 470 wards averaging under 73% white left, a sixfold difference (ONS LS 2001). Imagine a ward with 30,000 residents ( $r$ ), split evenly between white British and other ethnic groups ( $nw$ ). Now subdivide the white British into pro-immigration ( $wbp$ ) and anti-immigration ( $wba$ ) components. Thus:

$$r = nw + wbp + wba$$

Net white British pro-immigration flow in a given year is signified by  $\Delta wbp$  while net annual anti-immigration shift is given by  $\Delta wba$ . The balance between pro- and anti-immigration British white *stock* ( $\frac{wba}{wbp}$ ) at any point in time will be affected by the previous year's stock plus the balance between the two ideologies in the migration *flow* over the past year, with 'white flight' taking place where  $\Delta wba < \Delta wbp$ :

$$\frac{wba}{wbp} t_n = \frac{wba}{wbp} t_0 + \sum_{t=1}^n \left( \frac{\Delta wba}{\Delta wbp} \right)$$

Assume a stable white share of the population in the ward, with 7500 anti-immigration whites and 7500 pro-immigration whites at  $t_0$ . If just 50 more anti-immigration whites leave or 50 fewer enter per year than pro-immigration whites, then  $\Delta wpb - \Delta wba = 50$ . Thus, after 20

years, the remaining white British population consists of 8,500 pro-immigration and 6500 anti-immigration whites, i.e.  $\frac{wbp}{wba} = 8,500/6500$  or 1.31. From a position of parity, pro-immigration whites are now 31 percent more numerous than anti-immigration whites, more than enough to account for the effects of diverse contexts captured in most studies. In our data, for instance, the difference in white opposition to immigration between the most and least diverse quintile of wards is approximately 15 percent.

### 3) Multi-level model of desire to reduce immigration at MSOA level

Dependent Variable (Binary)	Model 1 Reduce immigration	Model 2 Reduce immigration	Model 3 Reduce immigration	Model 4 Reduce immigration	Model 5 Reduce immigration	Model 6 Reduce immigration a lot
Income	-0.05 (0.01)***	-0.05 (0.01)***	-0.05 (0.01)***	-0.02 (0.01)**	-0.02 (0.01)**	-0.01 (0.01)
No Qualifications	0.32 (0.08)***	0.31 (0.08)***	0.31 (0.08)***	0.13 (0.08)	0.13 (0.08)	0.27 (0.06)***
Single (couple ref.)	-0.31 (0.07)***	-0.30 (0.07)***	-0.29 (0.07)***	-0.27 (0.07)***	-0.26 (0.07)***	-0.35 (0.06)***
No children (children ref.)	-0.09 (0.06)	-0.10 (0.06)	-0.11 (0.06)	-0.10 (0.07)	-0.11 (0.07)	0.06 (0.05)
Middle Class (upper ref.)	0.42 (0.07)***	0.40 (0.07)***	0.40 (0.07)***	0.23 (0.07)**	0.22 (0.07)**	0.28 (0.06)***
Lower Supervisory (upper ref.)	0.68 (0.10)***	0.65 (0.10)***	0.65 (0.10)***	0.37 (0.10)***	0.37 (0.10)***	0.40 (0.07)***
Working Class (upper ref.)	0.48 (0.07)***	0.45 (0.07)***	0.45 (0.07)***	0.13 (0.08)	0.12 (0.08)	0.23 (0.06)***
Rented (owner ref.)	-0.20 (0.08)*	-0.17 (0.08)*	-0.17 (0.08)*	-0.17 (0.08)*	-0.14 (0.08)	0.01 (0.07)
Age	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	-0.01 (0.00)*	-0.01 (0.00)*	0.01 (0.07)
London	-0.62 (0.09)***	-0.13 (0.11)	-0.30 (0.15)*	-0.24 (0.15)	-0.20 (0.14)	-0.30 (0.13)*
Resident over 10 years	0.16 (0.05)**	0.15 (0.05)**	0.14 (0.05)**	0.11 (0.06)	0.10 (0.06)	0.08 (0.04)*
Minority % (Local Authority)			0.01 (0.00)	0.01 (0.00)*	0.01 (0.00)*	0.01 (0.07)
Minority % (MSOA)		-0.02 (0.00)***	-0.02 (0.00)***	-0.01 (0.00)***	-0.01 (0.00)**	0.00 (0.00)
Population density (MSOA)		-0.01 (0.03)	0.00 (0.03)	0.00 (0.04)	-0.03 (0.04)	-0.02 (0.03)
Carstairs Index (MSOA)		0.02 (0.01)***	0.02 (0.01)***	0.01 (0.01)	0.02 (0.01)*	0.02 (0.01)***
Private renters % (MSOA)					0.00 (0.01)	0.00 (0.00)
Singles % (MSOA)					-0.02 (0.01)***	-0.01 (0.01)*
English identifier				0.23 (0.08)**	0.22 (0.08)**	0.29 (0.07)***
Tabloid reader				0.59 (0.06)***	0.58 (0.06)***	0.53 (0.04)***
Mixing scale				-0.02 (0.00)***	-0.02 (0.00)***	-0.03 (0.00)***
Identify with nation				-0.63 (0.06)***	0.62 (0.06)***	0.47 (0.05)***
All friends/ same ethnic group				0.36 (0.06)***	0.36 (0.06)***	0.41 (0.04)***
People cannot be trusted				0.61 (0.05)***	0.61 (0.05)***	0.60 (0.04)***

<i>Random part</i>						
MSOA variance	0.23 (0.04)***	0.20 (0.04)***	0.15 (0.04)***	0.14 (0.04)***	0.13 (0.04)***	0.13 (0.04)***
Local Authority variance			0.06 (0.02)**	0.05 (0.02)**	0.03 (0.02)	0.03 (0.02)*
N (individual)	12614		12614	12614	12614	12614

Table entries are logged odds with robust standard errors, clustered by MSOA (N=2569) and Local Authority (N=364).

\*p<.05,\*\*p<.01,\*\*\*p<.001.

#### 4) Models of Shift in Share of Minorities in Ward of Residence for Movers, 1991-2012, England and Wales

	Model 1	Model 2	Model 3
	<i>Away v Toward Diversity</i>	<i>Toward Diversity (Quintile Change)</i>	<i>Toward Diversity (Minority % Change)</i>
Lagged % minority population in ward	-0.08 (0.02)***	-0.07 (0.01)***	-0.42 (0.05)***
White (individual)	0.72 (0.50)	0.39 (0.21)	0.86 (0.73)
White x minority % population in ward	-0.06 (0.02)**	-0.05 (0.01)***	-0.19 (0.05)***
Religious (non-religious ref.)	0.06 (0.16)	-0.03 (0.07)	0.13 (0.23)
Labour voter (Conservative ref.)	-0.38 (0.02)	-0.19 (0.08)*	-0.45 (0.28)
Liberal voter	-0.08 (0.25)	0.03 (0.09)	0.11 (0.31)
Non-voter	0.22 (0.24)	-0.04 (0.09)	-0.21 (0.46)
Gay rights wrong (disagree ref.)	0.11 (0.18)	-0.01 (0.07)	0.13 (0.24)
Cohabitation wrong (disagree ref.)	-0.09 (0.30)	0.08 (0.10)	0.25 (0.33)
British citizenship best (agree ref.)	0.04 (0.28)	0.00 (0.15)	-0.30 (0.45)
Britain history shame (agree ref.)	-0.23 (0.27)	-0.03 (0.10)	0.06 (0.37)
English identifier	-0.11 (0.14)	-0.04 (0.06)	-0.26 (0.20)
British identifier	-0.16 (0.15)	-0.04 (0.07)	-0.16 (0.23)
Low trust (high trust ref.)	-0.16 (0.16)	-0.15 (0.06)*	-0.62 (0.20)
Traditional family values	-0.27 (0.19)	-0.05 (0.07)	-0.09 (0.24)
Left/right scale	0.05 (0.16)	0.07 (0.07)	0.23 (0.23)
Class is not important to identity	0.22 (0.15)	0.08 (0.06)	0.32 (0.19)
Pseudo R <sup>2</sup>	0.56	0.25	
Adjusted R <sup>2</sup>			0.61
N	2253	7041	7041

\*p<.05, \*\*p<.01, \*\*\*p<.001. Source: BHPS 1991-2008; Understanding Society 2009-12. Controls for age, sex, class, education, income, employed, marital status, children, tenure, ward population density (present and lagged) and ward deprivation quintile (present and lagged) are included in the model but not reported in the table. *Note that attitudinal variables presented here are not limited to whites. All attitudinal interactions with white are insignificant.*

**5) Selection of Relevant YouGov Survey Questions, August 2013. For survey methodology, see <http://yougov.co.uk/publicopinion/methodology/>.**

[1]{single}Do you think the number of immigrants coming to Britain nowadays should be increased, reduced or should it remain the same?

- <1> Increased a lot
- <2> Increased a little
- <3> Remain the same
- <4> Reduced a little
- <5> Reduced a lot
- <6> Don't know

[2a]Local Council Wards in the UK have a population of about 10,000 to 30,000 people. Have you moved Local Council Ward to live somewhere new at any time in the past ten years?

- <1> No
- <2> Yes
- <3> Don't know

[2b if 2a ==2]As far as you know, did the last Local Council Ward in which you lived have...?

- <1> More people from an ethnic minority background than the ward I live in now
- <2> Fewer people from an ethnic minority background than the ward I live in now
- <3> About the same number of people from an ethnic minority background than the ward I live in now
- <4> Don't know

[3a]Thinking about YOUR NEIGHBOURHOOD, how comfortable or uncomfortable do you feel about the number of people from ethnic minorities who live there?

- <1> Very comfortable
- <2> Fairly comfortable
- <3> Neither comfortable nor uncomfortable
- <4> Fairly uncomfortable
- <5> Very uncomfortable
- <6> Don't know

[3b if not 3a in [4,5]]{single order=randomize}Which of the following statements best describes your views about the number of people from ethnic minorities living in YOUR NEIGHBOURHOOD?

- <1 fixed> I will always be comfortable with the number of people from ethnic minorities living in my neighbourhood
- <2> If the number of people from ethnic minorities increases I might feel uncomfortable at some point
- <3> If the number of people from ethnic minorities decreases I might feel uncomfortable at some point
- <4 fixed> Don't know

[3d if 3b == 2]When do you think you would start to feel uncomfortable about the number of people from ethnic minorities living in your neighbourhood? Would it be when people from ethnic minorities made up roughly . . . ?

- <1> More than three quarters (over 75%) of all people in your neighbourhood
- <2> Three quarters of all people (75%) in your neighbourhood
- <3> Two thirds of all people (66%) in your neighbourhood
- <4> Half of all people (50%) in your neighbourhood
- <5> One in every four people (25%) in your neighbourhood
- <6> One in every six people (17%) in your neighbourhood
- <7> One in every ten people (10%) in your neighbourhood
- <8> One in every twenty people (5%) in your neighbourhood
- <9> One in every fifty people (2%) in your neighbourhood
- <10> One in every hundred people (1%) in your neighbourhood
- <11> Fewer than one in every hundred people (less than 1%) in your neighbourhood
- <12> I am uncomfortable with any people from ethnic minorities living in my neighbourhood
- <13> Don't know

How comfortable or uncomfortable do you think you would feel if the following people you may come into contact with were from an ethnic minority?

- [6\_g1 if not 1 in 5] Next door neighbour
- [6\_g2 if not 2 in 5] Boss at work
- [6\_g3 if not 3 in 5] Doctor
- [6\_g4 if not 4 in 5] Friend
- [6\_g5 if not 5 in 5] Work colleague
- [6\_g6 if not 6 in 5] spouse/partner
- [6\_g7 if not 7 in 5] House cleaner
- [6\_g8 if not 8 in 5] Child's teacher
- [6\_g9 if not 9 in 5] Babysitter
- [6\_g10] The Prime Minister

- <1> Very comfortable
- <2> Fairly comfortable
- <3> Neither comfortable nor uncomfortable
- <4> Fairly uncomfortable
- <5> Very uncomfortable
- <6> Don't know

**6) Appendix I. Distribution of continuous variables used in Citizenship multilevel models**

<b>Variable</b>	<b>Mean</b>	<b>Standard deviation</b>	<b>Min</b>	<b>Max</b>	<b>Observations</b>
Ward MNE population	11.62	14.26	94.67	.86	16282
LA MNE population	13.30	14.06	1.97	82.41	16282
Carstairs Deprivation	.54	3.04	-4.94	14.06	16282
Population density	24.66	24.57	.05	24.68	16282
Mixing scale	18.83	9.78	1	48	15606
Age	52.38	18.55	17	95	16282