

The Cathie Marsh Centre for Census and Survey Research

# Demographic Explanations for Changes in Ethnic Residential Segregation across the Life Course

CCSR Working Paper 2010-06

Albert Sabater, Nissa Finney

asabater@ced.uab.es Nissa.finney@manchester.ac.uk

This paper presents analyses of changes in the level and direction of ethnic residential segregation in Britain taking a life-stage perspective. Changes are separately analysed for age cohorts, ethnic groups and sub-national areas. The results show ethnic residential desegregation in the 1990s across age cohorts and ethnic groups, and this is particularly marked for young adults. The second part of the paper examines how age differentiation in migration patterns can explain these changes in segregation. It shows that what has been described as ‘White flight’ and ‘minority self-segregation’ can alternatively be seen as a dynamics of desegregation in which age differentiated migration is common across ethnic groups: young adult urbanisation and family/older adult suburbanisation with immigration of a similar magnitude to the least and most diverse areas.

# **Demographic Explanations for Changes in Ethnic Residential Segregation across the Life Course**

## **Abstract**

This paper presents analyses of changes in the level and direction of ethnic residential segregation in Britain taking a life-stage perspective. Changes are separately analysed for age cohorts, ethnic groups and sub-national areas. The results show ethnic residential desegregation in the 1990s across age cohorts and ethnic groups, and this is particularly marked for young adults. The second part of the paper examines how age differentiation in migration patterns can explain these changes in segregation. It shows that what has been described as ‘White flight’ and ‘minority self-segregation’ can alternatively be seen as a dynamics of desegregation in which age differentiated migration is common across ethnic groups: young adult urbanisation and family/older adult suburbanisation with immigration of a similar magnitude to the least and most diverse areas. The paper concludes that it is necessary to take age into account to understand ethnic residential segregation and its dynamics. The paper uses census-based population and components of population change estimates for small areas linking the 1991 and 2001 censuses in England and Wales and 2001 UK census microdata.

Keywords: ethnicity; residential segregation; age cohorts; census; England and Wales.

## 1. Introduction

The fear of ethnic ghettos has been established over centuries (Wirth 1928), although the modern idea which has dominated the topic both theoretically and quantitatively was developed during the first decades of the twentieth century by the ecological paradigm of the Chicago School of Sociology. Since the seminal work on the subject by Robert Park (1924) on *The Concept of Social Distance* and Ernest Burgess (1928) on *Residential Segregation in American Cities*, the study of separation of groups has drawn on the political and intellectual idea of how elites have viewed the relationship between ethnicity and poverty in the city (Ward, 1989).

In his classic book *The Ghetto*, Louis Wirth (1928: 6) incorporates the ‘Little Sicilies, Little Polands, Chinatowns, and Black Belts in our large cities’ as the equivalent of Jewish ghettos of medieval Europe. In the classical paper of Duncan and Lieberson (1959), the authors demonstrate an inverse relationship between residential segregation and assimilation of immigrants, a landmark publication which gave rise to the development of dissimilarity indices as well as a quantitative framework based on the idea that high levels of segregation are problematic, because these imply that a subgroup of the population is isolated from opportunities, resources and amenities (Kaplan and Holloway, 1998; Massey, Condran and Denton, 1987; Logan, 1978). Such correlation between segregation and social and economic well-being has also become a public debate in Europe, generally associated with the African American model of inner-city segregation (Fortuijn *et al.*, 1998). Although these ideas have influenced thinking about race relations in Europe, considerable literature has challenged the ‘straight line’ view of integration (Alba and Nee, 1997) and the notion that residential segregation represents both negative causes and negative consequences (Peach, 1996a, 1996b, 2009).

Residential integration may not have occurred as quickly or straightforwardly as early theories suggested; decreasing residential segregation has been a characteristic of European cities (Musterd, 2005). Nevertheless, the topic of residential ethnic segregation has resumed a position high on the agenda in both academic and policy circles over the last decade in Britain and elsewhere. Initial reaction was quick to assume ‘bad’ segregation but more recent debate has turned to understandings of the processes of population change that underpin ethnic geographies. Demographic work has shown that the underlying processes of residential patterns of ethnic groups represent common experiences of migration and expected patterns of natural change (Stillwell and Hussain, 2008; Simon, 2009; Simpson *et al.*, 2008; Simpson and

Finney, 2009; Finney and Simpson, 2009a). There is little evidence that continued clustering represents retreat and ethnic division. However, the first decade of the twenty first century has seen a shift in political rhetoric in Britain and elsewhere, from concern with multiculturalism and anti-discrimination back to concern with residential segregation with the emergence of the community cohesion agenda (Cantle, 2001; Kalra and Kapoor, 2009; Flint and Robinson, 2008). The centuries-old myths about ethnic segregation have returned to shape political responses (Finney and Simpson, 2009a). In response there has been renewed interest in research on ethnic group population change which has tried to understand in greater depth the causes and meanings of residential clustering and dispersal.

This paper builds on the demographic body of work in this area by bringing the concepts of age and life course into debates about ethnic segregation and the processes of ethnic group population change (Sabater, 2010). The paper addresses two questions which are not to date investigated by the literature:

1. How has segregation changed over time for different age cohorts and ethnic groups and in different places?
2. Has migration resulted in decreased segregation for young adults, and if so, is this the case for White and minority ethnic groups?

The paper first outlines methods, data and definitions. It then presents results of changes in ethnic residential segregation by age cohorts nationally and locally and relates these to components of population change. It then focuses on the young adult age group and the specific migration patterns in relation to ethnic concentrations that have led to de-segregation of this group. The paper shows that the dynamics of desegregation are age differentiated migration common across ethnic groups - young adult urbanisation and family/older adult suburbanisation - and concludes that it is necessary to take age into account to understand ethnic residential segregation and its dynamics.

## **2. Data and methods**

Three data sources are used in this paper: Full Population Estimates (1991-2001 by ethnic group and age), Components of Population Change Estimates (1991-2001 by ethnic group and age) and 2001 UK Census microdata. The Full Population Estimates are complete mid-1991 and mid-2001 population estimates for sub-national areas in England and Wales. Even though many users of demographic statistics will find census data sufficiently useful to compare the geographical patterns of settlement of ethnic groups over time, such comparisons

are subject to four types of bias that make comparisons of populations over time difficult (Simpson *et al.*, 1997; Sabater, 2008; Sabater and Simpson, 2009): (1) the population definition, which defines who is a resident, has changed between the 1991 and 2001 Censuses; (2) the treatment of non-response in the census in 1991 and 2001 was different, and varied between ethnic groups, areas and ages; (3) key classifications changed between 1991 and 2001, including ethnic group and age in standard outputs; and (4) geographical boundaries used for standard census outputs changed, after local government reviews between 1991 and 2001. The Full Population Estimates take into account these four sets of bias (see Sabater and Simpson 2009 for further details).

The Component of Population Change estimates are a decomposition of the population change between 1991-2001 in the Full Population Estimates into their demographic components of births, deaths and net migration. Components of change have been estimated for wards and districts of Britain, separately for ethnic groups by sex and single year of age. As Vital Statistics in Britain do not record ethnic group, demographic estimation procedures have been applied which give net migration for sub-national areas as a residual. Full technical details of the method can be found in Simpson, Finney and Lomax (2008).

Additionally, the research has used 3 percent microdata samples from the Individual Sample of Anonymised Records (SAR) and the Controlled Access Microdata Sample (CAMS) from the 2001 UK Census. These datasets provide information on migration with an age and ethnic group breakdown, and with geographic detail in the CAMS. As a result this presents a higher risk of disclosure (i.e. the identification of information about individuals) and, therefore, the use of the CAMS dataset has to be approved and in a secure setting<sup>1</sup>. Migration data in the UK Census 2001 are based on a question about place of residence one year prior to census day. If this is different from the address on census day, the individual is considered to have migrated in the year prior to the census.

For the calculation of residential segregation, two common measures have been used, the Index of Dissimilarity (*ID*) and the Index of Isolation (*P\**). *ID* indicates how evenly one ethnic group is spread out geographically compared to the rest of the population (Massey and Denton, 1988). *ID* is conceived to measure an unequal geographical spread and is generally expressed as a percentage with index values between 0 and 100. The original form of *ID* is given by:

---

<sup>1</sup> For more details on 2001 Census microdata including how to access the data see [www.ccsr.ac.uk](http://www.ccsr.ac.uk)

$$ID = 0.5 * \sum_i \left| \frac{N_{gi}}{N_{g\cdot}} - \frac{N_{\bar{g}i}}{N_{\bar{g}\cdot}} \right|$$

Where  $N_{gi}$  refers to the population of group  $g$  in locality  $i$ ;  $\bar{g}$  means the rest of the population; and the summation over an index is represented by the dot symbol. The same formulae can be used to compare the spread of any two groups by superseding the second term in the formulae with the area's proportion of a second group  $h$ .

$P^*$  is used to indicate the average local concentration of a group (Liebersohn, 1963).  $P^*$  is also conceived as the probability that members of one group will meet with members of their own group.  $P^*$  can be expressed as follows:

$$P^* = \sum_i \left( \frac{N_{gi}}{N_{g\cdot}} \right) \left( \frac{N_{gi}}{N_{\cdot i}} \right)$$

The interpretation of this index is also straightforward as a percentage. If the index is close to 0, it indicates that the average local concentration of the group being studied is very low. On the contrary, if the index values are close to 100, it highlights a high level of concentration, thus meaning that all members of the group are in areas where no other groups live.

For the purposes of comparison over time Census ethnic group categories have been aggregated to eight compatible groups: White, Caribbean, African, Indian, Pakistani, Bangladeshi, Chinese and Other, with the 2001 Mixed groups being included in the residual Other category. The first seven of these groups are the most coherent and stable classification from 1991 to 2001 (Office for National Statistics 2006; Simpson and Akinwale 2007). The residual eighth category is used for completeness but is very diverse and of different composition in the two years.

### 3. Residential segregation across age cohorts

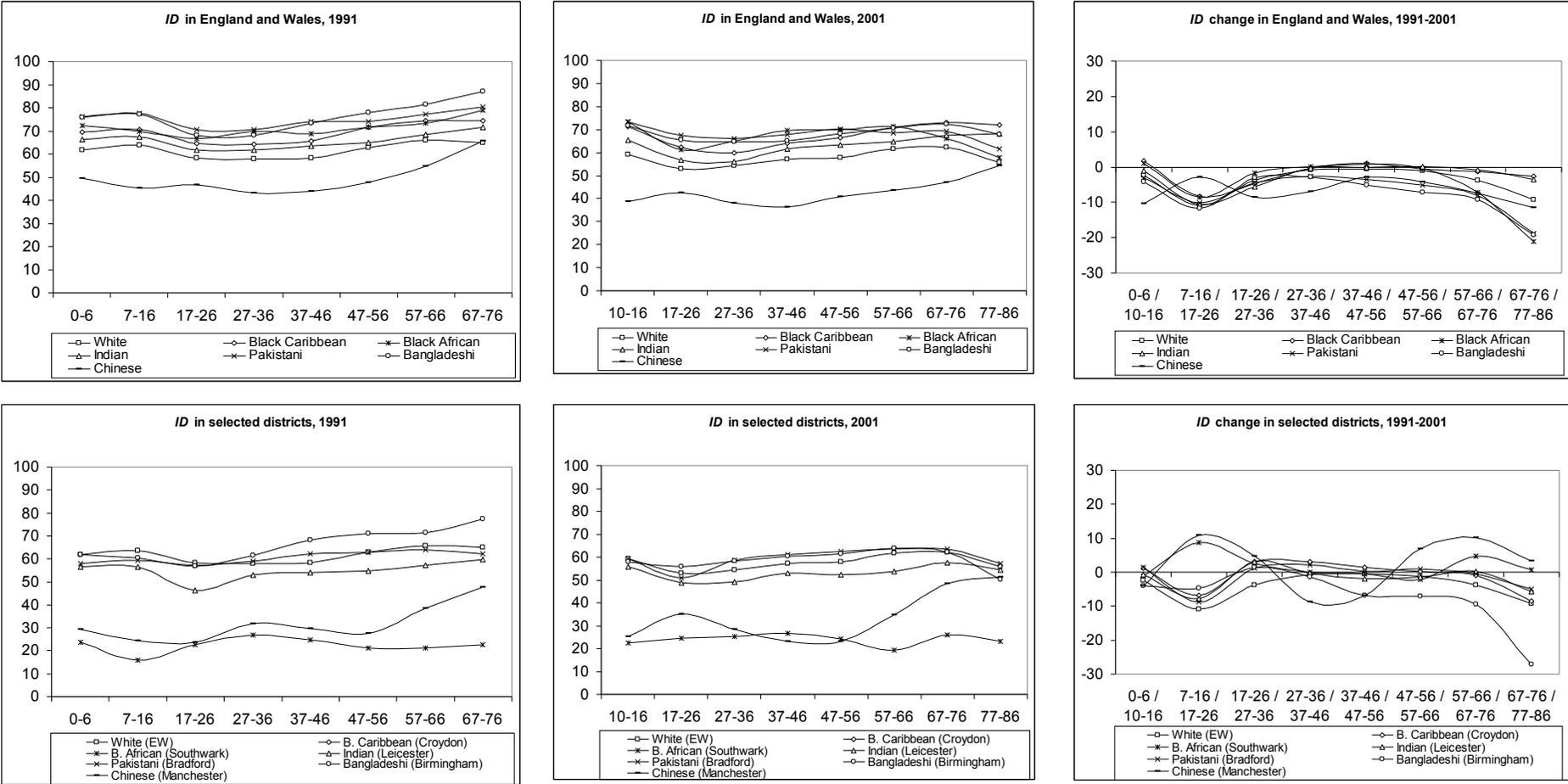
In this section residential segregation of ethnic groups for different age cohorts between 1991 and 2001 across wards in England and Wales is analysed. Despite the interest in recent years in the study of geographical mobility over the life course, with particular interest in its motivations and implications (Clark and Withers, 2007; Geist and McMacus, 2008) as well as its specific relationships with, for example, women's economic activity (Dale *et al*, 2006) or

family change and the need for domestic space (Bonney *et al*, 1999; Kulu and Milewski, 2007), only in some older studies, specifically in the US context, has residential segregation of Whites and Blacks been examined across the life course (Edwards, 1971; Taeuber and Taeuber, 1965). In Rossi's classic study of residential mobility (1955), residential mobility of Blacks to White neighbourhoods is seen as a spatial expression of vertical social mobility, the rate of which varies depending on age and stage in the life course. This relationship between spatial mobility and the life course is also well established through age migration schedules (Rogers *et al*, 1978; Rogers and Watkins, 1987), a framework based on constant migration which is affected by four peaks of migration over the life course (early childhood, early participation in the labour force, retirement and late old age).

This section first explores changes in residential segregation for various age cohorts through the index values of *ID* across wards in England and Wales and for selected districts in 1991 and 2001. Within this context, the age cohort change analysis is used as a proxy to examine the relationship between residential segregation over the life course. For example, index values of the resident population aged 0-6 in 1991 are compared with index values for those aged 10-16 in 2001. Similarly, those aged 7-16 in 1991 are compared with the equivalent for those aged 17-26 ten years later. Consequently, the results for these groups are used to illustrate changes in the level of segregation for a first age segment whose life stage can be considered to be primarily influenced by education. Similarly, other age segments can be related to life stages of family building and work, and retirement.

Figure 1 shows the index values of *ID* by age cohorts across wards in England and Wales (top row) and for selected districts between 1991 and 2001 (bottom row). A separate line is presented for each ethnic group and the three graphs in each row present *ID* values in 1991, *ID* values in 2001 and change in *ID* over the decade.

**FIGURE 1: ID values of ethnic groups by age cohorts across wards in England and Wales and for selected districts, 1991-2001**



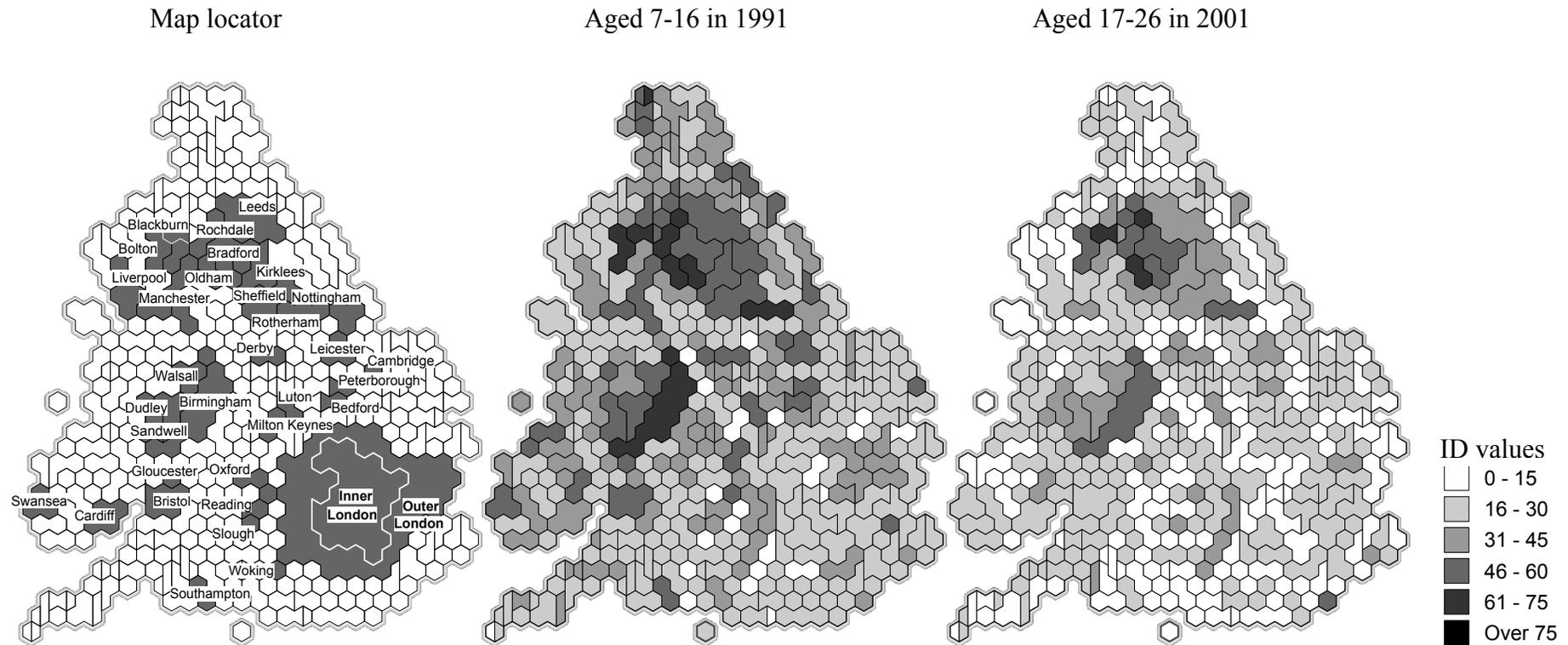
Source: CCSR Components of Population Change Estimates and Full Population Estimates (Sabater and Simpson, 2009).

The analysis of the index values nationally clearly indicates a decrease in the level of residential segregation for each age cohort, a reduction that appears to be generally greater among ethnic groups other than White. The exception is the Chinese group, whose settlement pattern is generally more uniformly distributed partly as a result of their numerous links to restaurants and takeaways nationwide. The analysis across age cohorts indicates a decrease in the level of unevenness during the decade for all ethnic groups in a similar fashion: the youngest group (which refers to children living with their parents) and adult ages show similar changes, whilst a significant decrease in segregation (*ID*) is found among young adults. It is readily understood that the lower levels of residential segregation for young adults are a consequence of the difference in the residential distribution of schoolchildren and young adults (some of them university students). In addition, international migration can affect residential segregation, particularly of young adults given that most immigrants are in this age group. This is exemplified by the Chinese group, whose overseas migration to UK universities would explain the relative increase in the index values of *ID* for young adults compared to other ethnic groups. Recent Chinese immigration, largely of Higher Education students, has increased the proportion and clustering of the Chinese population in urban centres.

In the middle aged phase - those age cohorts 17-26, 27-36, 37-46 in 1991 and ten years later – the patterns of desegregation suggest that those who can afford to move from big urban concentrations to less urban environments are likely to do so, thus following the suburbanisation process (Champion, 1989, 1996, 2005; Finney and Champion, 2008). Since older age cohorts of ethnic minority groups are affected by a significant number of neighbourhoods with small numbers of ethnic groups, not much should be made of the changes for these ages.

In the analysis of ethnic residential segregation by age cohorts for selected districts, results tend to replicate the reduction in index values of *ID* obtained nationally for England and Wales (the selection of districts was made in order to test the usefulness of the proposed approach in areas where ethnic groups are overrepresented). However, some districts also reveal situations of increased unevenness locally during the decade for some age cohorts. For example, during the early adulthood phase, Black Africans in Southwark and Chinese in Manchester experienced increased segregation. This is most likely a result of immigration between 1991 and 2001 of young adults, accentuating the clustering of these groups in these districts. During the middle adulthood phase, an increase in unevenness is seen, particularly for Pakistanis in Bradford and Bangladeshis in Birmingham, which may be caused by further

**FIGURE 2: ID values of non-White groups during the early adulthood phase across wards in 2001 districts. England and Wales, 1991-2001**



Source: CCSR Components of Population Change Estimates and Full Population Estimates (Sabater and Simpson, 2009).

NB: The areas in these cartograms are districts represented in proportion to the population size in 2001, maintaining the topology wherever possible. The shapefiles for the cartogram were created by Dorling and Thomas (2004).

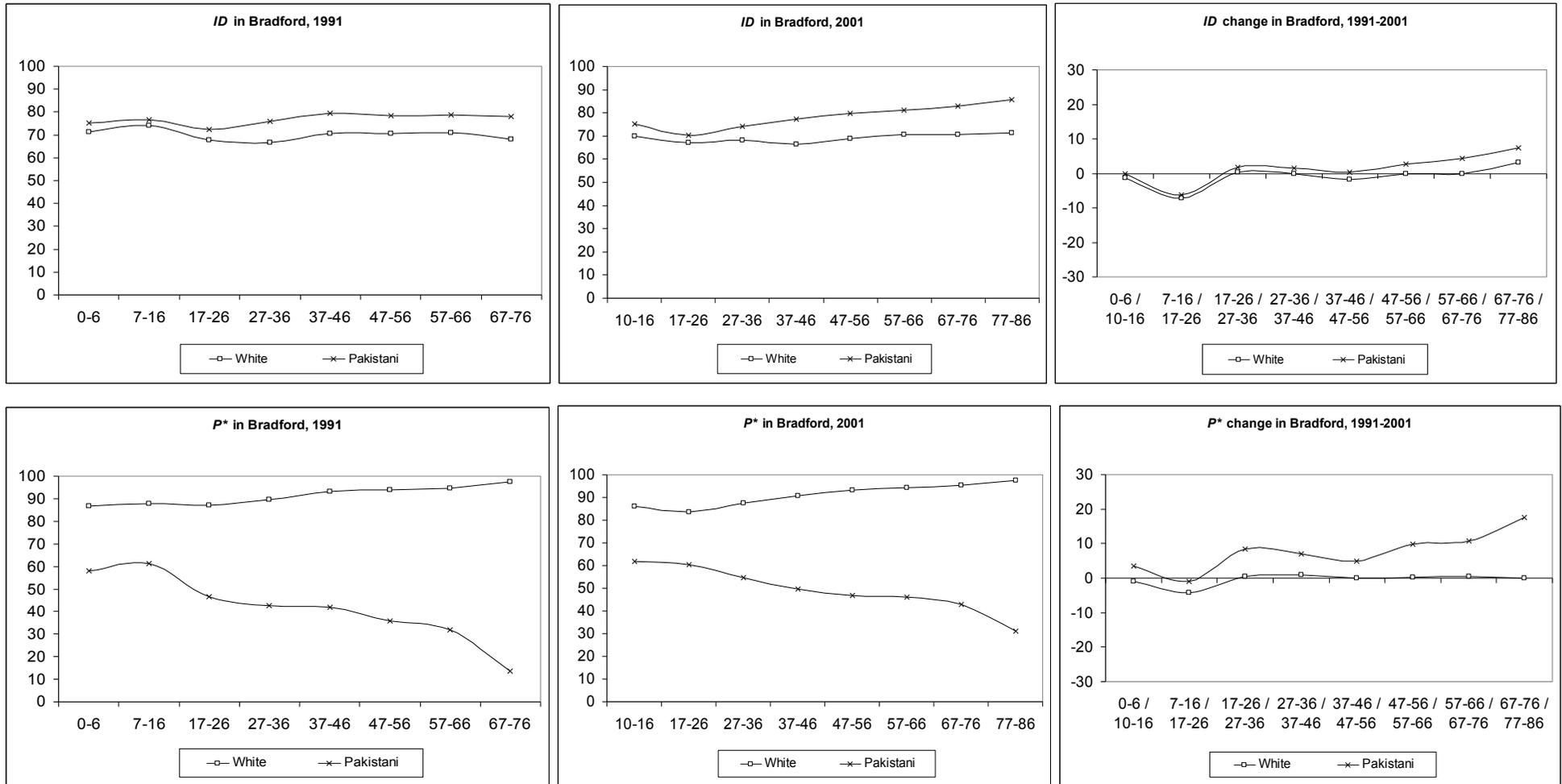
**FIGURE 3: ID values of non-White groups during the middle adulthood phase across wards in 2001 districts. England and Wales, 1991-2001**



Source: CCSR Components of Population Change Estimates and Full Population Estimates (Sabater and Simpson, 2009).

NB: The areas in these cartograms are districts represented in proportion to the population size in 2001, maintaining the topology wherever possible. The shapefiles for the cartogram were created by Dorling and Thomas (2004).

**FIGURE 4:  $ID$  and  $P^*$  values of White and Pakistani groups by age cohorts across Output Areas in Bradford, 1991-2001**



Source: CCSR Components of Population Change Estimates and Full Population Estimates (Sabater and Simpson, 2009).

migration to these districts (internal or international) due to migrants' marriages or family reunification (Kofman, 2000).

Figures 2 and 3 show the index values of  $ID$  of non-White groups during the early adulthood and middle adulthood phases across wards in 2001 districts of England and Wales. The maps clearly illustrate how the two age cohorts (7-16 and 17-26 in 1991 and ten years later) have become more evenly spread across districts, particularly from districts where non-White groups were most clustered. Although ethnic minority groups in the UK have very different residential geographies due to the timing and reasons for their immigration (Dale *et al.*, 2006), those districts in traditional industrial areas in the North-West, Yorkshire and Lancashire and the West Midlands appear to have the largest decreases in the index values of  $ID$ . This would go in line with the idea that whilst the demographic consequences of immigration initially lead to greater isolation and segregation, the impact of growth and the unavailability of housing leads to dispersal from settlement areas to other parts of the country (Simpson *et al.*, 2008).

In Britain the concern with concentrations of Muslim populations has been politically evident since riots in northern British cities in 2001 (Cantle, 2001; Phillips, 2005). The historical concentration of South Asian groups in the inner areas with the cheapest private housing of cities such as Bradford originates from international migration to fill the unpopular night shift of textile industries in response to competition after the Second World War. Considering the demography of immigration,  $ID$  and  $P^*$  are expected to change after significant streams of immigration. To illustrate this, Figure 4 is used to define the behaviour of  $ID$  and  $P^*$  for the White and Pakistani groups by age cohorts across Output Areas (the smallest census areal unit employed in 2001) in Bradford. As expected after the early years of immigration and the strong urban pattern of their natural growth in existing areas of Pakistani settlement, the index values of  $ID$  of the Pakistani group for all age cohorts show greater unevenness compared to the White group. This tendency is characteristic where the influence of the kinship ties is strong, thus reflecting the settlement pattern of international migration around the family, cultural and religious support given by social networks. Also as expected,  $P^*$  shows how all the age cohorts of the White group are more isolated from other ethnic groups than is the case for the Pakistani population of Bradford. The most notable change in  $P^*$  over the decade is an increase for most age cohorts for the Pakistani population. This will partly reflect increases in the population due to natural growth (for the youngest cohort) and in-migration from elsewhere in Britain and overseas. A notable feature of change in both  $ID$  and  $P^*$  for White and Pakistani populations of Bradford in the 1990s is the reduction in

segregation of young adults. The role of age differentiated migration patterns in explaining this change is the subject of the following section.

#### **4. The role migration in decreasing residential segregation**

Residential segregation, measured using two commonly used indices, has been shown to have decreased over the 1990s for young adults in Britain of all ethnic groups. Although changes in segregation may occur as a result of in-situ population growth, particularly for minority populations with young age structures (see Finney and Simpson, 2009b), it is migration that redistributes the population. It has been suggested that migration patterns of young adults can explain this desegregation. This section explores how the migration patterns of young adults can explain their increased ethnic mixing (decreased residential segregation) through the 1990s.

Political concern has focused on movement of minorities towards areas in which they are most concentrated, a process that has become described as a combination of ‘self-segregation’ of minorities and ‘White flight’ of the majority population. However, analysis of internal migration patterns has revealed a process of dispersal from settlement areas to other types of area is occurring not only for the White group but also for non-White groups (Simpson and Finney, 2009a; Stillwell and Hussain, 2008; Simon, 2009). In conjunction with this evidence, research based on surveys of households has found that many South Asians, particularly young adults, would like to move, with others, to areas outside the current settlements (Ratcliffe, 2000; Phillips, 2002):

“Contrary to the popular perception that South Asians, especially in places like Bradford, prefer to self-segregate, we found evidence of the desire for more mixing on the part of all ethnic/religious groups. Almost all respondents who talked about mixing characterised this as a process of Asian integration into ethnically mixed neighbourhoods rather than dispersal to white areas... Movement to the outer areas of Leeds and Bradford was motivated by a better quality of physical environment,... better housing,... better schools,... a safer environment,... a more independent lifestyle, away from the sanctions and gossip of the ethnic cluster.” (Phillips, 2002, p10.)

First it is important to assess whether the migration of young adults is in any way distinct from migration at other ages and whether this holds for each ethnic group. Table 1 presents within-Britain migration rates and shows a peak in migration rates for young adults for each ethnic group. More than for any other age group, therefore, migration has the potential to alter local ethnic group compositions of young adults. The question then arises of whether the migration is re-inforcing ethnic concentrations or dispersing them.

**TABLE 1: Within Britain migration rates (%) 2000-2001, by ethnic group and age**

	White British	White Irish	White Other	Mixed	Indian	Pakistani	Bangla deshi	Other Asian	Black Caribbean	Black African	Black Other	Chinese	Other	Total
0-15	10.9	9.6	15.0	11.9	8.6	8.5	8.2	11.4	8.9	13.5	9.4	10.7	15.0	10.9
16-19	15.8	24.0	24.4	15.9	12.3	8.6	9.8	15.2	14.3	17.7	12.7	20.5	24.0	15.8
20-24	32.6	45.4	48.1	33.7	23.7	17.9	15.6	29.4	22.0	33.2	19.6	42.8	37.0	32.4
25-29	24.0	32.6	36.2	28.1	19.5	15.9	15.4	23.7	17.0	28.6	16.2	25.2	32.3	24.3
30-44	11.4	13.5	17.7	14.8	10.3	10.2	9.2	16.7	10.7	16.4	11.4	13.5	18.9	11.7
45-59	5.0	4.7	6.4	7.9	3.7	5.6	5.6	6.4	6.7	9.6	9.2	5.1	7.8	5.0
60-64	3.8	3.1	4.4	4.1	2.9	3.5	5.8	5.0	3.7	6.0	2.0	5.3	6.6	3.8
65+	5.7	7.2	5.1	3.8	8.0	7.0	4.6	8.3	7.7	4.7	9.7	11.1	16.4	5.7
Total	10.5	10.2	18.0	15.0	10.1	10.0	9.7	14.3	9.9	17.0	11.3	16.1	18.7	10.8

*Source: 2001 Census SAR, GB. Numerator is population who changed address in the year prior to the census; Denominator is 2001 population in each age/ethnic group.*

**TABLE 2: Net migration between districts classified by ethnic concentration, 2000-2001, by age and ethnic group**

a) Migration of ethnic minority young adults

	Net gain to highest minority concentration districts from:	Net gain to high minority concentration districts from:	Net gain to medium minority concentration districts from:	Net gain to low minority concentration districts from:	Net gain to lowest minority concentration districts from:
Highest minority concentration districts		16	-7	31	18
High minority concentration districts	-16		-28	-11	5
Medium minority concentration districts	7	28		-12	-48
Low minority concentration districts	-31	11	12		-49
Lowest minority concentration districts	-18	-5	48	49	

b) Migration of ethnic minorities of other ages

	Net gain to highest minority concentration districts from:	Net gain to high minority concentration districts from:	Net gain to medium minority concentration districts from:	Net gain to low minority concentration districts from:	Net gain to lowest minority concentration districts from:
Highest minority concentration districts		57	42	75	73
High minority concentration districts	-57		21	31	37
Medium minority concentration districts	-42	-21		42	64
Low minority concentration districts	-75	-31	-42		23
Lowest minority concentration districts	-73	-37	-64	-23	

c) Migration of White young adults

	Net gain to highest White concentration districts from:	Net gain to high White concentration districts from:	Net gain to medium White concentration districts from:	Net gain to low White concentration districts from:	Net gain to lowest White concentration districts from:

Highest White concentration districts		-36	44	100	298
High White concentration districts	36		17	65	131
Medium White concentration districts	-44	-17		116	597
Low White concentration districts	-100	-65	-116		1173
Lowest White concentration districts	-298	-131	-597	-1173	

d) Migration of Whites of other ages

	Net gain to highest White concentration districts from:	Net gain to high White concentration districts from:	Net gain to medium White concentration districts from:	Net gain to low White concentration districts from:	Net gain to lowest White concentration districts from:
Highest White concentration districts		-38	0	-117	-300
High White concentration districts	38		-390	-152	-452
Medium White concentration districts	0	390		-255	-608
Low White concentration districts	117	152	255		-943
Lowest White concentration districts	300	452	608	943	

Source: 2001 UK Census Controlled Access Microdata Sample (CAMS). Population: GB. Young adults are age 18-29. Internal migration 2000-2001.

NB: Districts have been grouped into five categories based on their percentage of non-White/White population. This division is such that each quintile of districts has the same non-White/White population but in differing concentrations.

Table 2 presents the balance of migration (net migration; in-migrants minus out-migrants) between districts grouped according to level of concentration of either White or ethnic minority (non-White) population. The migration is within Britain between 2000 and 2001 using data from the 2001 Census Controlled Access Microdata Sample. The table has four panels: migration of ethnic minority young adults (a), migration of ethnic minorities of other ages (b), migration of White young adults (c) and migration of Whites of other ages (d).

Non-White young adults are on balance moving away from areas of highest non-White concentration to other areas. At the same time areas of moderate and high concentration are gaining minority young adults from areas of low minority ethnic concentration. Thus, for non-White young adults there could be said to be a convergence to the 'middle ground' of areas of moderate to high ethnic diversity. The pattern for young adult Whites is clearer: they are dispersing from White concentrations and therefore moving into more ethnically diverse districts.

For both non-White and White populations aged under 19 and over 30 the direction of movement differs from that for young adults: families and older adults are moving to more White areas. This is illustrated in the right hand panel of Table 2 by dispersal of non-White families/older adults from non-White concentrations and movement of White families/older adults to more White areas. The different geographical patterns for young adults and other can be understood in terms of urbanisation of young adults and counterurbanisation of families and older adults (Champion, 1989). Young adults, both White and non-White, are moving to diverse urban areas whilst families/older adults, White and non-White, are suburbanising away from urban centres. In terms of residential integration, Whites and non-Whites of young adult and other ages are moving to the same types of districts thereby creating ethnic mixing.

Table 3 presents net migration for areas classified by concentration of ethnic minority population for Whites and minorities, for young adults and people of other ages taken together. Total net migration from the components of change estimates has been decomposed into internal migration and international migration in the final two columns of Table 3. This decomposition should be read as indicative because of discrepancies in the three measures of migration used in the table (see table notes).

**TABLE 3: Net Migration for neighbourhoods grouped by minority ethnic concentration, by ethnic group and age**

Quintile of minority concentration	Total Migration		Migration within Britain		International migration (indicative estimate)	
	Whites	Minorities	Whites	Minorities	Whites	Minorities
<b>Young adults</b>						
Lowest	-65,914	5,883	-73,300	-2,467	7,400	8,400
Low	34,527	7,220	29,733	1,900	4,800	5,300
Medium	25,755	6,787	21,733	833	4,000	6,000
High	10,541	5,255	8,300	1,667	2,200	3,600
Highest	3,258	4,119	13,533	-1,933	-10,300	6,000
<b>Non young adult</b>						
Lowest	121,298	12,735	76,767	6,567	44,500	6,200
Low	-36,942	2,168	-13,967	4,200	-23,000	-2,000
Medium	-31,162	-2,465	-15,767	-1,433	-15,400	-1,000
High	-21,728	219	-31,867	-1,100	10,100	1,300
Highest	-12,353	132	-15,167	-8,233	2,800	8,400

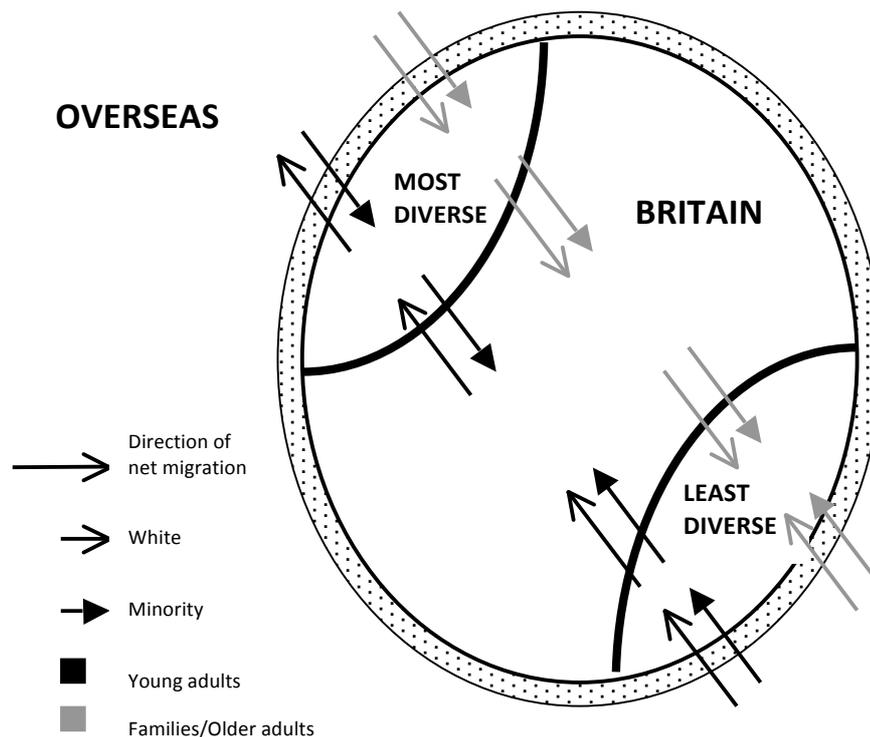
Sources: For Total Migration: Components of change estimates, 1991-2001 divided by ten to approximate a yearly figure. Based on wards of England and Wales.

NB: White is all Census White groups; Minorities are all others. For Migration within Britain: 2001 Census CAMS, 2000-2001 scaled to 100% from figures for 3% sample. Based on districts of Britain.

White is White British; Minorities are all non-White groups. Young adults are aged 18-29; Non young adults are all other ages taken together. International migration has been estimated by subtracting migration within Britain from total migration and is only indicative of patterns due to the discrepancies in the total and internal migration measures as described above. Figures have therefore been rounded to the nearest 100.

The table reveals two important findings. First, the pattern of dispersal/suburbanisation which has been seen for the White and minority populations as a whole is evident for children and older adults but not for young adults. Second, there is not a clear pattern of net immigration of minority populations being greater in areas in which they are concentrated than other areas and for young adults both White and minority, immigration is greatest to the areas of least ethnic minority concentration. The dynamics of desegregation are summarised diagrammatically in Figure 5. The Figure represents the net direction of internal and international migration for the most and least diverse areas, for Whites and minorities of young adult and other ages.

**FIGURE 5: Dynamics of Desegregation**



The least diverse areas, which can be alternatively seen as the most White areas and also the most rural areas, grow through net immigration of young adults and families/older adults, White and minority. They also gain families and older adults, White and minority, from elsewhere in Britain. They lose young adults, White and minority, to elsewhere in Britain. Overall, these dynamics result in the least diverse areas losing White young adults but gaining minority young adults, and also gaining Whites and minority families/older adults.

The most diverse areas in Britain, alternative seen as central urban neighbourhoods, gained families/older adults, both White and minority, from overseas due to net immigration and simultaneously lost this population, on balance, to elsewhere in Britain. The same dynamic is seen for minority young adults: net gain from overseas and net loss to elsewhere in Britain. For White young adults, however, the migration dynamics are in the opposite direction: the most diverse areas gain White young adults from elsewhere in Britain and lose them, on balance, through emigration. Overall, these dynamics result in the most diverse areas gaining minorities (young adults and families/older adults) and White young adults but losing White families/older adults. Thus, the picture that has been described as ‘White flight’ and ‘minority self-segregation’ can alternatively be described as age differentiated

migration common across ethnic groups: young adult urbanisation and family/older adult suburbanisation with immigration of a similar magnitude to the least and most diverse areas.

## **5. Conclusions**

This paper has analysed UK census data and population estimates to address how ethnic residential segregation has changed over time for different age cohorts, ethnic groups and sub-national areas; and to examine the migration dynamics that account for decreased segregation. The analyses found residential segregation between 1991 and 2001 to have decreased for all age cohorts, with the largest gains in evenness among young adults. The patterns by age were remarkably similar across ethnic groups, with the exception of the Chinese group which did not experience as great an increase in evenness of young adults as other ethnic groups. Desegregation of young adults was found throughout Britain, though there are examples where this was not the case (such as Black Africans in Southwark and Chinese in Manchester). It has been suggested that immigration of young adults to these districts results in an increase in clustering which offsets the dispersal to elsewhere in Britain.

Dynamics of migration have been shown to explain the desegregation observed. Contrasting internal migration experiences of young adults and other ages both in terms of the level and direction of movement have been found, with this age differentiated migration common to White and non-White populations. Young adults tend to migrate within Britain towards diverse urban areas and are highly mobile whereas families and older adults demonstrate counterurbanisation. In terms of residential integration, Whites and non-Whites of young adult and other ages are moving within Britain to the same types of districts thereby creating ethnic mixing.

International migration generally results in net population gain in the least and most diverse areas of Britain. In the least diverse areas this reinforced the internal gain of families/older adults and replenished young adults lost to elsewhere in Britain. In the most diverse areas immigration replenished loss of families and older adults to elsewhere in Britain. These patterns are consistent for Whites and minorities. Net immigration is of a similar magnitude to the most and least diverse areas though for young adults, both White and minority, immigration is greatest to the areas of least ethnic minority concentration. Overall, the findings of this paper show that the

dynamics of ethnic residential desegregation are age differentiated migration common across ethnic groups - young adult urbanisation and family/older adult suburbanisation.

From this, the conclusion can be drawn that the residential integration of ethnic groups cannot be expected to follow a 'straight line' from urban centres. Rather, the migration geographies are age differentiated and compounded by ongoing international migration in the most and least diverse areas. The maintenance of an ethnic cluster cannot be assumed to represent ethnic retreat or conflict as it is likely to be the result of young adult urbanisation, natural growth and replacement immigration. Furthermore, the dynamic maintenance of ethnic clusters is in the context of more general residential dispersal and desegregation.

In understanding the complexities of sub-national ethnic group population change it is necessary to pay attention to different migration experiences at different life stages. It may be that commonalities in residential decision making transcend differences resulting from ethnicity.

While age has been shown to be an important component in understanding changing residential segregation, further work could fruitfully examine other elements of time. Particularly, is the age differentiated migration observed here a product of the time period being studied? And, to what extent do the migration behaviours of young adults differ generationally from those of their parents and grandparents, and are there specificities to minority ethnic group generational change that may be characteristic of immigrant integration?

Finally, this paper presents a partial picture in our understandings of ethnic integration: it advances our understanding of the dynamics of desegregation but does not examine what this mean socially. Why people decide to move and how they choose their destination is a complex combination of choice and constraint, made by individuals in household and neighbourhood contexts. In order to conclude about ethnic relations, it is necessary to investigate how the motivations behind the migration patterns observed in this paper are influenced by ethnicity, whether ethnic conflict plays a role, or whether other factors of family, locality and residential aspiration are more dominant in migration decision making for all ethnic groups.

## 6. References

- Alba, R. and Nee, V. (1997) 'Rethinking assimilation theory for a new era of immigration', *International Migration Review*, 31(4): 826-874.
- Bonney, N., McCleery A. and Forster, E. (1999) 'Migration, marriage and life course: commitment and residential mobility'. In Boyle, P. and Halfacree, K. (eds.) *Migration and Gender in the Developed World*, London: Routledge, 136-150.
- Burgess, E. (1928) 'Residential segregation in American cities', *Annals of the American Academy of Political and Social Science*, 14: 105-115.
- Cantle, T. (2001) *Community cohesion: a report of the independent review team*, London: Home Office.
- Champion, A. (1989) *Counterurbanisation: the changing pace and nature of population deconcentration*, London: Edward Arnold.
- Champion, A. (1996) 'Internal migration and ethnicity in Britain'. In Ratcliffe, P. (ed.) *Ethnicity in the 1991 Census, Volume 3, Social geography and ethnicity in Britain: geographical spread, spatial concentration and internal migration*, London: ONS/HMSO, 135-173.
- Champion, A. (2005) 'The counterurbanisation cascade in England and Wales since 1991: the evidence of a new migration dataset', *Belgeo*, 12: 85-101.
- Clark, W. and Withers S. (2007) 'Family migration and mobility sequences in the United States: Spatial Mobility in the context of the life course', *Demographic Research*, 17(20): 591-622.
- Dale, A., Lindley, J. and Dex, S. (2006) 'A lifecourse perspective on ethnic differences in women's economic activity in Britain', *European Sociological Review*, 22(4): 459-476.
- Dorling, D. and Thomas, B. (2004) *People and places: A 2001 Census atlas of the UK*, Bristol: The Policy Press.
- Duncan, O. and Liberson, S. (1959) 'Ethnic segregation and assimilation', *American Journal of Sociology*, 64(4): 364-374.
- Edmonston, B. and Michalowski, M. (2004) 'International migration'. In Siegel, J. and Swanson, D. (eds.) *The methods and materials of demography*, London: Elsevier, Chapter 18: 455-492.
- Edwards, O. (1972) 'Family composition as a variable in residential succession', *American Journal of Sociology*, 77: 731-741.

- Finney, N. and Champion, A. (2008) Labour markets, skills and talents: Residential migration, Working paper for the Manchester Independent Economic Review.
- Finney, N. and Simpson, L. (2008) 'Internal migration and ethnic groups: evidence for Britain from the 2001 census', *Population, Space and Place*, 14(2): 63-83.
- Finney, N. and Simpson, L. (2009a) *Sleepwalking to segregation? Challenging myths about race and migration*, Bristol: The Policy Press.
- Finney, N. and Simpson, L. (2009b) Population dynamics: the roles of natural change and migration in producing the ethnic mosaic, *Journal of Ethnic and Migration Studies*, 35(10): 1707-1716.
- Flint, J, and Robinson, D. (eds.) (2008) Community Cohesion in crisis? New dimensions of diversity and difference. Bristol, Policy Press.
- Fortuijn, J., Musterd, S. and Ostendorf, W. (1998) 'International migration and ethnic segregation: impacts on urban areas', *Urban Studies*, 35: 367-370.
- Geist, C. and McMacus, P. (2008) 'Geographical mobility over the life course: Motivations and implications', *Population, Space and Place*, (14): 283-303.
- Kalra, V. and Kapoor, N. (2009) 'Interrogating segregation, integration and the community cohesion agenda', *Journal of Ethnic and Migration Studies*, 35(9): 1397-1415.
- Kaplan, D. and Holloway, S. (1998) *Segregation in cities*, Washington DC: Association of American Geographers.
- Kofman, E., Phizacklea, A., Raghuram, P. and Sales, R. (2000) *Gender and international migration in Europe*, London: Routledge.
- Kulu, H. and Milewski, N. (2007) 'Family change and migration in the life course: An introduction', *Demographic Research*, 17(19) 567-590.
- Liebersohn, S. (1963) *Ethnic patterns in American cities*, New York: The Free Press of Glencoe.
- Logan, J. (1978) 'Growth, politics and the stratification of places, *American Journal of Sociology*, 184: 404-416.
- Massey, D., Condran, G. and Denton, N. (1987) 'The effects of residential segregation on Black social and economic wellbeing', *Social Forces*, 66: 29-56.
- Massey, D. and Denton, N. (1988) 'The dimensions of residential segregation', *Social Forces*, 67: 281-315.
- Musterd, S. (2005) 'Social and ethnic segregation in Europe: levels, causes, and effects', *Journal of Urban Affairs*, 27 (3): 331-348.

- Office for National Statistics (2006) *A guide to comparing 1991 and 2001 Census ethnic group data*, Titchfield: Office for National Statistics.
- Office of Population Censuses and Surveys (OPCS) (1989) *Key population and vital statistics 1989*, No. 14, VS PP1, No. 10, London: HMSO.
- Park, R. (1924) *The concept of social distance*, reprinted in *Race and culture: The collected papers of Robert Ezra Park*, vol. I, Glencoe, Illinois: The Free Press (1950), p. 260.
- Peach, C. (1996a) 'Good segregation, bad segregation', *Planning Perspectives*, (11): 379–398.
- Peach, C. (1996b) 'Does Britain have ghettos?', *Transactions of the Institute of British Geographers*, 21(1): 216-235.
- Peach, C. (2009) 'Slippery segregation, discovering or creating ghettos? Segregation, assimilation and social cohesion', *Journal of Ethnic and Migration Studies*, 35(9): 1381-1395.
- Phillips, D. (2002). Movement to opportunity? South Asian relocation in northern cities. End of Award report, ESRC R000238038. Leeds, University of Leeds, School of Geography.
- Phillips, D. (2006) 'Parallel lives? Challenging discourses of British Muslim self-segregation', *Environment and Planning D: Society and Space*, 24 (1): 25-40.
- Phillips, T. (2005) After 7/7: Sleepwalking to segregation speech given at Manchester Council for Community Relations, 22 September 2005. Available at: <http://www.cre.gov.uk/diversity/integration.html>
- Ratcliffe, P. et al. (2000) *Breaking down the barriers: improving Asian access to social rented housing*. London: CIH.
- Rossi, P. (1955) *Why families move: a study of the social psychology of urban residential mobility*, Glencoe, Illinois: The Free Press.
- Rogers, A., Raquillet, R. and Castro, L. (1978) 'Model migration schedules and their applications', *Environment and Planning A*, 10(5): 475-502.
- Rogers, A. and Watkins, J. (1987) 'General versus elderly interstate migration and population redistribution in the United States', *Research on Aging*, 9(4): 483-529.
- Rowland, D. (2002) *Demographic methods and concepts*, Oxford: Oxford University Press.
- Sabater, A. (2008) Estimation of ethnic groups in subnational areas for analysis of population change, England and Wales, 1991-2001. Manchester: Centre for

- Census and Survey Research, University of Manchester, PhD Thesis.
- Sabater, A. and Simpson, L. (2009) 'Enhancing the population census: a time series for subnational areas with age, sex and ethnic group dimensions in England and Wales, 1991-2001', *Journal of Ethnic and Migration Studies*, 35(9): 1461-1477.
- Sabater, A. (2010) Ethnic residential segregation over time and cohorts in England and Wales, 1991-2001, in J. Stillwell, N. Finney and M. Van Ham (eds), *Ethnicity and Integration. Understanding Population Trends and Processes*, Vol. 3, London: Springer.
- Simon, A (2009) *Calculating ward level internal migration measures using census 2001 data*. Working paper. Thomas Coram Research Unit, Institute of Education.
- Simpson, L., Finney, N. and Lomax, S. (2008) Components of population change: An indirect method for estimating births, deaths and net migration for age, sex, ethnic group and subregional areas of Britain, 1991-2001, CCSR Working Paper 200803.
- Simpson, L. and Akinwale, B. (2007) 'Quantifying stability and change in ethnic group', *Journal of Official Statistics*, 23(2): 185-208.
- Simpson, L. and Finney, N. (2009) 'Spatial patterns of internal migration: evidence for ethnic groups in Britain', *Population, Space and Place*, 15: 37-56.
- Simpson, L., Gavalas, V. and Finney, N. (2008) 'Population dynamics in ethnically diverse towns: The Long Term Implications of Immigration', *Urban Studies*, 45 (1): 163-183.
- Simpson, L., Cossey, R. and Diamond, I. (1997) '1991 population estimates for areas smaller than Districts', *Population Trends*, 90: 31-39.
- Stillwell, J. and Hussain, S. (2008) 'Ethnic group migration within Britain during 2000-01: a district level analysis' *University of Leeds School of Geography Working Paper, Leeds*
- Voss, P., McNive, S., Hammer, R., Johnson, K. and Fuguitt, G. (2004) *Countyspecific net migration by five year age groups, Hispanic origin, race and sex, 1990-2000*, University of Wisconsin Madison.
- Ward, D. (1989) *Poverty, ethnicity and the American city 1840-1925*, Cambridge: Cambridge University Press.
- Wirth, L. (1928) *The Ghetto*, Chicago: The University of Chicago Press.

### **Acknowledgements**

The 2001 Census Samples of Anonymised Records are provided through the Cathie Marsh Centre for Census and Survey Research (University of Manchester), with the support of the ESRC and JISC. Use of the 2001 Census Controlled Access Microdata Sample is supported by the Office for National Statistics. Census output is Crown copyright and all tables containing Census data, and the results of analysis, are reproduced with the permission of the Controller of Her Majesty's Stationery Office and the Queen's Printer for Scotland. The authors alone are responsible for the interpretation of the data.

This research was sponsored by the UK Economic and Social Research Council (UPTAP grant RES-163-27-0011) and the Juan de la Cierva Fellowship Programme of the Ministry of Science and Innovation of Spain (JCI-2009-03757).