

The dynamics of ethnic group population change: a demographic explanation of clustering and dispersal

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Introduction

Theories of immigrant settlement have traditionally proposed that immigrant-origin groups will disperse from the place of original settlement and that this spatial mixing will be accompanied by social integration (Park 1952, Frey 2006). However, these ideas have been re-examined in recent years as it has emerged that spatial distance between ethnic groups is not reducing as anticipated. Continued clustering of immigrant-origin groups has challenged the theories of dispersal (Simpson 2007, Simpson et al 2008) and work on 1.5 and second generation has found that the migration-integration sequence does not appear to be playing out in the long term (Ellis and Goodwin-White 2006).

This rethinking of ethnic group population change and integration has taken place in the context of shifting international political terrain which was initiated dramatically in 2001 by the attacks on the USA. In Britain there has been a return to concerns of segregation reminiscent of the mid-20th century, and a departure from the focus on equality that characterised the later decades of that century (Kundnani 2007, Vertovec 2007). In this context, explanations for geographies of ethnicity, particularly in political arenas, have become focused on flight of white populations from minorities and retreat of minorities into their own communities. The chair of the Commission for Racial Equality summarised the problem like this:

Some districts are on their way to becoming fully fledged ghettos – black holes into which no-one goes without fear and trepidation, and from which no-one ever escapes undamaged. The walls are going up around many of our communities, and the bridges...are crumbling...The aftermath of 7/7 forces us to assess where we are. And here is where I think we are: we are sleepwalking our way to segregation. We are becoming strangers to each other, and we are leaving communities to be marooned outside the mainstream...These marooned communities will steadily drift away from the rest of us, evolving their own lifestyles, playing by their own rules and increasingly regarding codes of behaviour, loyalty and respect that the rest of us take for granted as outdated behaviour that no longer applies to them. We know what follows then: crime, no-go areas and chronic cultural conflict. (Trevor Phillips 2005)

Many commentators, however, have critiqued this new race-relations rhetoric and provided alternative explanations. One outcome has been the publication of work that focuses less on cross-sectional measures of segregation and more on processes of population change (Simpson, Gavalas and Finney 2008, Phillips D 2006). The findings of this emerging body of work point to the importance of non-racial processes and the need to investigate demographics in order to properly understand the drivers of ethnic group population change.

This paper aims to contribute to this growing literature by drawing on theories and methods from demography, ethnic relations and population geography, and particularly those fields of population dynamics and internal migration, to better understand the patterns of residence of Britain's population in terms of ethnicity. In particular, the paper seeks out the demographic causes of clustering and dispersal by examining how national and sub-national population dynamics – the relation between net migration and natural change – vary between ethnic groups.

The paper first outlines the demographic approach taken to understanding population change, briefly reviewing previous work on population dynamics and internal migration. The methods used in this paper are then outlined. Results are presented and discussed in two sections, first looking at the national picture and then at sub-national variations. The final section provides the conclusion.

Population dynamics and internal migration

Populations grow or decline as a result of three components, births, deaths and migration, and it is these components that demographers investigate. The impact of each component for different places and different population sub-groups depends on the differences in rates of each component and the differences in composition of the population which affects the absolute levels of births, deaths and migration. Understanding population dynamics and their geographies is complex: 'studies of regional variation in the components of the demographic equation – births, deaths and migration, reveal that the nation is far from convergent to single national values, either across ethnic groups or across regions' (Morrill 1995: 41).

To understand the different dynamics – the clustering and dispersal – of immigrant origin groups, it is necessary to know how the different components of change are acting for each group. However, relatively little research has investigated the demography of ethnic groups in Britain. Haskey (2002) provides the most comprehensive review of knowledge. In general, minority ethnic groups in Britain have higher fertility than the White population: each woman has on average more children and there are larger populations of women of productive age (though this

is not so for the Caribbean and Indian groups). Little is known about ethnic differences in mortality: there are no consistent estimates of this in the UK and data deficiencies present significant challenges for those wishing to derive accurate estimates (Harding and Balarajan 2002).

In terms of migration, both migration rates and the places between which migrants flow have been found to be different for different ethnic groups. Robinson (1992), Owen (1997) and Champion (1996) used the 1991 census to explore internal migration by ethnic group and Stillwell and Duke Williams (2005) and Finney and Simpson (forthcoming 2008) have looked at 2001 patterns. Minority groups tend to have a greater propensity to migrate than the White population though this is largely accounted for by socio-demographic composition of ethnic group populations, and particularly age composition (Finney and Simpson forthcoming 2008). Generally minority groups move shorter distances than the White population but all groups move on balance away from areas in which they are concentrated (Simpson and Finney forthcoming 2008).

Table 1: Ethnic group population, age structures and main period of arrival in Britain

Ethnic Group	Group as % of GB population 2001	% GB population aged 15-40 2001	% GB population ages 60+ 2001	Main period of arrival in Britain
White	91.8	35.0	22.0	Pre-1900
Caribbean	1.0	44.5	16.1	1955-1964
African	0.9	53.1	4.0	Since 1991
Indian	1.9	46.3	10.1	1965-1974
Pakistani	1.3	47.1	6.5	1965-1979
Bangladeshi	0.5	47.9	5.8	1980-1988
Chinese	0.4	53.8	7.6	Since 1991
Other	2.2	44.8	5.1	-

Source of populations: estimates used in this paper. Source of final column: Peach (1996); African and Chinese: Finney and Simpson (under review).

Differences in the age structure and the distribution of ethnic group populations are critical for understanding demographic differences. Minority populations in Britain – which comprise 8.2% of the population - are younger than the White population because young labour migrants who arrived in the third quarter of the twentieth century are only now reaching retirement ages. Table 1 shows how the more recent immigrant groups have the highest proportion of their population under the age of 40. For all minority groups around half of their population is of this

age compared to 35% of the White population. The minority population in Britain is also disproportionately located in both Inner and Outer London compared with the population as a whole, and much less often in remote urban areas and rural areas (Simpson and Finney forthcoming 2008).

The urban-ness of immigrant origin groups is not surprising given the urban local of housing and work opportunities for the migrants when they first arrived in Britain. What has run counter to traditional theories of immigrant settlement and integration however, is the persistence of minority clusters at the same time as there has been increased mixing and diversity (Simpson 2007). Interpretations of this phenomenon have focused on ideas of ‘flight’, ‘retreat’ and ‘balkanisation’ (Frey 1996): resident populations move out as new immigrants arrive; internally populations move away from each other so as to maintain separation. However, the extent to which the population change is racialised has been questioned. Simpson *et al* (2008) proposed that the growth of clusters through immigration and natural change caused housing pressure that led to dispersal of existing populations. Finney and Simpson (forthcoming 2008) confirmed that the direction of movement of both the White and minority populations is away from areas of minority ethnic concentration reflecting counterurbanisation rather than movement of divisive racial separation.

This theory of natural growth and dispersal suggests that the patterns of population change might usefully be understood through an examination of the relations between natural change and net migration. The crux of the issue is whether minorities are on different stages of a demographic sequence or whether they are experiencing something fundamentally different from the majority White population. The theory of a demographic sequence proposes that migration occurs from the urban core to peripheral areas where there is natural increase. Later, young populations move again from the peripheral areas leaving an ageing population and natural decrease (Webb 1963).

However, relatively little work has examined the relations between net migration and natural change particularly for ethnic groups. Webb (1963) developed a typology of eight types of population change depending on the direction of overall population change and the direction and relative importance of natural change and net migration. Webb’s typology is used in this paper and is discussed further below.

Champion (1987) also considered the relative importance and directions of natural change and net migration for different types of areas in Britain. He found that “the natural change component has usually been operating in the same direction and has thus reinforced rather than offset the effect of migration developments – as indeed would be expected, given that young

couples about to start a family form a major element in outward migration from city cores” (Champion 1987: 395). Conversely, it was found that rural areas tended to experience net migration loss and natural decrease. However, it has long been acknowledged that ‘the progress of a place through a sequence of population changes may be interrupted by new trends, particular to the place, which start and re-direct demographic processes’ (Webb 1963: 142). A simple stepwise sequence is unlikely to be found because of the complex overlapping of generations in any place, places acting in more ways than one, and with broader changes in migration (e.g. re-urbanisation) and fertility patterns (e.g. second demographic transition).

Two concepts are central to the idea of a demographic sequence: life-stage and urban-ness of place. In migration research the latter has been particularly important. Theories of population redistribution have proposed ‘mobility transitions’ which, in a similar way to demographic transitions, are experienced by different places and population groups at different points in time. Zelinski’s (1971) classic theory suggested there would be transitions from rural to rural migration; rural to urban migration; urban to urban migration. Since the middle of the twentieth century patterns of counter-urbanisation – urban to rural migration – have been identified in much of the developed world (e.g. Champion 1989, Frey 2006, Plane *et al* 2005). Recent studies have revealed, however, that re-urbanisation may be occurring, and particularly for young people. Migration flows are not as unidirectional as traditional theories suggest and may not be a step-wise progression of moves up or down the urban hierarchy (Champion *et al* 2007, Plane *et al* 2005).

Plane, Henrie and Perry (2005) use the concept of an urban hierarchy to explore patterns of natural change and migration. They show that natural change is the most important component of population change for the USA as a whole and for each type of area on a categorisation of urban hierarchy with the exception of the least urban. They found that younger urban populations – resulting from the young populations migrating to the most urban areas – had higher natural growth as a result of excess births over deaths and conclude that ‘there is an inverse relationship between [population] size and rates of natural increase’ (2005: 15316).

The expected relationships between migration, births, deaths, ages and type of area are drawn together by Morrill (1995) who produces a typology of population change. He demonstrates, using net migration estimates and US Census data that the typology accurately reflects population change in the counties of Oregon and Washington in the 1980s. Morrill brings together concepts of demographic and mobility transitions, life-stage and urban-ness. He theorises that the type of population change of an area will depend on whether the population of that area is growing or declining and at what rate, the age structure of the population, the rates of natural increase and

migration, and the type of area in terms of urban-ness and economic development. In particular, he distinguishes between the age of migrants: young people are found to be moving out of urban areas with declining populations and low natural increase, and those with high natural increase but where there is economic decline. They move into areas of economic resurgence and population growth. In contrast, older people migrate to areas of average population growth and natural increase but with high levels of amenities.

Population dynamics are complex. However, the literature points us in a number of directions for understanding the processes in Britain. It is clear that life stage and type of place play important roles; that natural change and migration play out differently at different ages and in different places. We can expect differences in types of population change between ethnic groups because of their very different age structures. However, there is no reason to expect that different types of areas play a different role for different ethnic groups, unless racial processes are producing very different migration experiences.

Methods

Estimates of components of population change for ethnic groups and districts in Britain

To answer the questions posed in this paper information is needed about births, deaths and migration for ethnic groups for sub-national areas in Britain. These data are not available from official statistics, censuses or surveys because vital statistics are not collected with an ethnic group breakdown. This paper therefore uses indirect estimates of births, deaths and migration¹. The estimates are for the period 1991-2001 for 8 ethnic groups and 408 districts of Britain, for sex and (for deaths and net migration) single year of age. The average survival method was used, with net migration calculated as a residual (see Simpson, Finney and Lomax 2008 for details). The net migration estimates include international and internal migration.

The survival method of estimating migration is a well established demographic technique (Voss *et al.* 2004, Rowland 2002, Edmonston and Michalowski 2004). Here it has been developed for application to ethnic groups, small areas and the data available in the UK. The resultant dataset is particularly original in its estimation of migration over a decade with emigration included. The method has the disadvantage that it can only provide statistics of net migration; details of inflows, outflows, origins and destinations are lacking. However, the method has the advantage of being applicable at all geographical scales and points in time.

The method used for estimating the components of population change relies on the demographic balancing equation (Box 1). Migration is that part of population change which is not due to births or deaths, which together constitute natural change. When the start and end

populations are known, as they are from censuses and other population estimates in the UK, population change is easily obtained. The challenge to estimate migration during the period is reduced to measuring natural change and deducting it from population change.

Box 1: The demographic balancing equation

$$\begin{aligned}\text{Population change} &= \text{natural increase} + \text{net migration} \\ &= (\text{births-deaths}) + (\text{arrivals-departures}) \\ (\text{arrivals-departures}) &= \text{Population change} - (\text{births-deaths})\end{aligned}$$

The survival approach was applied to each ethnic group in each of the 408 local authority districts of Britain, which on average have a total population of 130,000. The estimation involved five stages that take into account ethnic group and local variations. First, the number of births into each age cohort that will be aged between 0 and 9 at 2001 were estimated using child-woman ratios in 1991 and the number of children in 2001. Second, these births estimates were scaled so that when summed across ethnic groups they are consistent with official vital statistics data by district, age and sex for the relevant year. Third, an initial estimation of the number of deaths was made using an average of the forward and reverse survival methods. Fourth, these deaths estimates were scaled so that when summed across ethnic groups they are consistent with total deaths from official vital statistics for each district for the period 1991-2001. Fifth, final estimates of migration were generated with calculations based on the demographic balancing equation.

The success of this method depends partly upon the quality of the measure of population change. An accurate and reliable time series of population estimates is an essential starting point for robust decomposition of population change. The research presented here used estimates which give populations for districts of England, Wales and Scotland by sex, single year of age and ethnic group for 1991 and 2001 (Sabater and Simpson 2007, Sabater 2008). Each estimate is based on census data but takes into account the problems of non-response, alteration to the enumeration of students, timing adjustment between census day and mid-year, boundary changes, and changes to the ethnic group census categories.

Sabater provides population estimates for ten ethnic groups for 1991 and sixteen for 2001. For the purposes of comparison over time the data for each of the two time points have been aggregated to eight ethnic groups: White, Caribbean, African, Indian, Pakistani, Bangladeshi, Chinese and Other, with the 2001 Mixed groups being included in the residual Other category. There are a number of issues about the comparability of ethnic group categories over time but it

has been found that the first seven of these groups were 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.

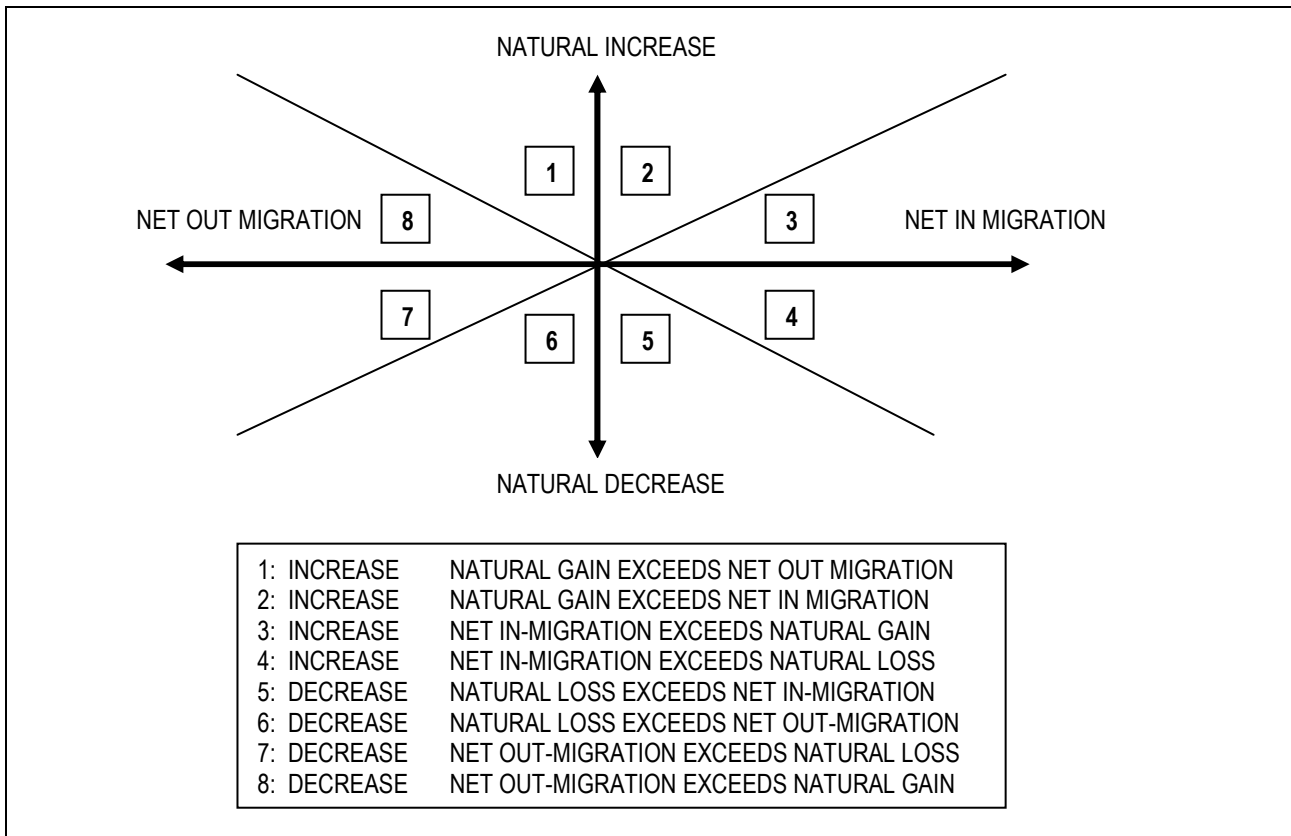
The validity of using the eight group classification is supported by comparison with population change due to net migration and natural change calculated using an alternative construction of ethnic group categories (Table 2). This alternative uses a matrix of the proportion of people who selected each ethnic group in 1991 and 2001, developed by Simpson and Akinwale (2007) from the UK Census Longitudinal Study. The matrix shows, for example, that 0.6 per cent of those recorded as Caribbean in 1991 were recorded as African in 2001, and 2.4 per cent of 1991 Africans moved to Caribbean in 2001. Discounting the residual Other category, comparison of the estimates for the country as a whole suggests that the eight group classification is reliable. The alternative classification is not used in this paper because its application is complex in comparison to the method chosen and the matrix of transitions between groups from 1991 to 2001 is unlikely to apply equally to each district of Britain and each age.

Relations between net migration and natural change

Net migration and natural change are compared overall and using Webb's typology of population change (Figure 1). The overall comparison focuses on the contributions of each component of population change in relation to population size. The comparison of the impact of natural change and net migration using the Webb typology presents the proportion of Britain's districts experiencing each combination of natural change and net migration, for each ethnic group.

Webb's typology can be seen as having three levels of information. On the first level, sub-national areas (districts) are classified according to whether their population increased (types 1 to 4) or decreased (types 5 to 8). The second level identifies whether there was natural gain (above the horizontal; types 1, 2, 3 and 8) or natural loss (below the horizontal; types 4, 5, 6, and 7); and net in-migration (right of the vertical; types 2, 3, 4 and 5) or net out-migration (left of the vertical; types 1, 6, 7, and 8). The third level of information indicates whether (the absolute value of) natural change exceeded net migration in a district (types 1, 2, 5 and 6) or whether net migration exceeded natural change (types, 3, 4, 7 and 8). This relatively straightforward typology that can be visually represented, actually provides a great deal of layered information about the population dynamics of sub-national areas.

Figure 1: Webb's (1963) typology of types of population change



In order to assess the sub-national variation in components of population change and population dynamics – particularly whether something different is being experienced by minority populations from White populations – it is helpful to use groups of areas, classified by type, because of the very different distribution of the different ethnic groups across districts of Britain. This paper uses a classification of areas commonly used in studies of internal migration in Britain that reflects the urban hierarchy common to theories of migration and population dynamics. This classification was originally developed by the Office for Population Censuses and Surveys and has since been employed in much internal migration research in Britain (Champion 1987, 1996).

In addition, in order to assess claims of retreat by minority ethnic groups, areas are also classified by the concentration of the minority ethnic population. Districts have been divided into quintiles according to minority ethnic concentration (minority groups taken as a whole). Each quintile contains the same minority ethnic population but because the quintiles represent differing concentrations each quintile contains a different number of districts. So, the highest quintile contains a fifth of Britain's minority population in districts where they are most concentrated; and the lowest quintiles contains a fifth of the minority population in districts where they are least concentrated.

Life stage forms part of the analysis of population change types. Age is used as a proxy for life stage and four broad age groups are used: 0-17, 18-29, 30-54, 55+. Principal Components Analysis on the components of change estimates revealed these groupings to be most significant. In particular, migration of ages 18-29 was different from, and in the opposite direction to, all other ages.

The roles of net migration and natural change nationally

Quite different dynamics of population change are revealed for the eight ethnic groups (figure 2 and table 2). The population of all groups increased over the decade (by 2.8% overall), though at differing rates. The African population grew at the fastest rate (93% increase on 1991 population) followed by Bangladeshi (62%) and Pakistani (46%). Chinese (35%) and Indian (18%) grew less; and Caribbean and White least (1.1% and 0.5% respectively).

The net migration figures in table 2 and figure 2 (and throughout this section) show the balance of *international* migration for each ethnic group over the decade 1991-2001 because the district figures have been summed to the country level, thus giving migration once the internal movements have cancelled each other out. For all ethnic groups apart from the Caribbean group, there was population increase over the decade as a result of both positive natural change and positive net migration. The Caribbean group differed in that it lost population from Britain between 1991 and 2001 as a result of emigration.

Population change due to natural change in relation to 1991 population size varied from 0.2% for Whites – a small impact on the population – to 41% for the Bangladeshi group i.e. there was a 41% growth in the Bangladeshi population over the decade due to an excess of births over deaths. Population growth of around one third due to natural change was seen for African and Pakistani groups; and one tenth for Chinese, Indian and Caribbean (figure 2). Natural change, therefore, played a very significant role in population growth nationally for minority ethnic groups.

Population change due to net migration in relation to 1991 population size varied from 0.3% for Whites (marginally higher than the impact of natural change) to 60% for African. Pakistani, Bangladeshi, Chinese and Other had population growth due to migration of 16-29%. The figure is much smaller for the Indian group (5%). The Caribbean group lost 9% of its 1991 population as a result of migration and was the only group to experience net emigration.

If the impact of natural change and net migration are compared, migration had a greater impact on population increase over the decade for the Chinese, African and White groups; for all other groups - Caribbean, Indian, Pakistani, Bangladeshi and Other - and the population as a whole, natural change had the greatest impact.

Table 2: Components of population change for ethnic groups in Britain 1991-2001

Ethnic group	Population 1991	Population 2001	Population Change 1991-2001	Births 1991 to 2001	Deaths 1991 to 2001	Natural Change 1991 to 2001	Net Migration 1991 to 2001	Natural Change 1991 to 2001 as % of 1991 population	Net Migration 1991 to 2001 as % of 1991 population	Natural Change 1991 to 2001 as % of 1991 population (alternative ethnic groups)	Net Migration 1991 to 2001 as % of 1991 population (alternative ethnic groups)
White	52,441,709	52,709,827	268,119	6,136,459	6,018,735	117,724	150,395	0.22	0.29	0.35	0.60
Caribbean	570,751	573,990	3,239	86,952	30,003	56,949	-53,710	9.98	-9.41	12.67	-5.24
African	258,746	499,790	241,044	94,024	7,775	86,249	154,795	33.33	59.82	31.32	47.96
Indian	903,024	1,068,343	165,319	162,250	39,434	122,816	42,503	13.60	4.71	14.36	12.55
Pakistani	519,115	759,540	240,425	177,798	18,151	159,647	80,778	30.75	15.56	30.22	17.40
Bangladeshi	178,195	288,673	110,478	78,712	5,679	73,033	37,444	40.99	21.01	40.26	22.70
Chinese	184,788	249,666	64,879	27,143	7,242	19,901	44,978	10.77	24.34	11.20	23.01
Other	775,035	1,274,346	499,311	302,695	26,731	275,963	223,348	35.61	28.82	25.44	-1.67
All Groups	55,831,363	57,424,176	1,592,813	7,066,033	6,153,751	912,282	680,531	1.63	1.22	1.63	1.22

Source: MRPD Estimates

Figure 2: Natural change and net migration 1991-2001 for ethnic groups in Britain, percent and counts

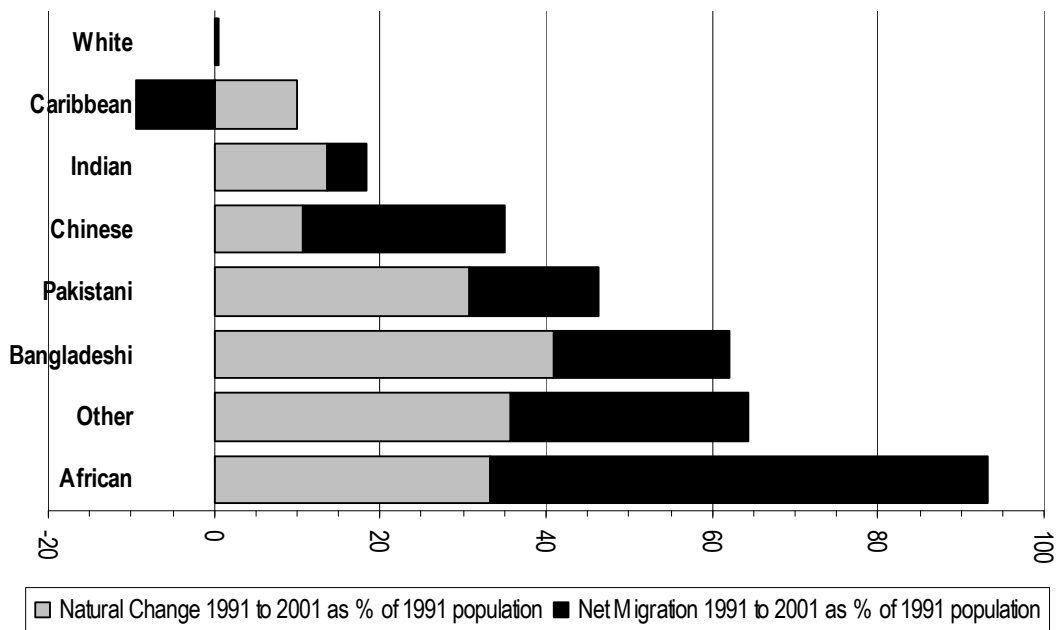
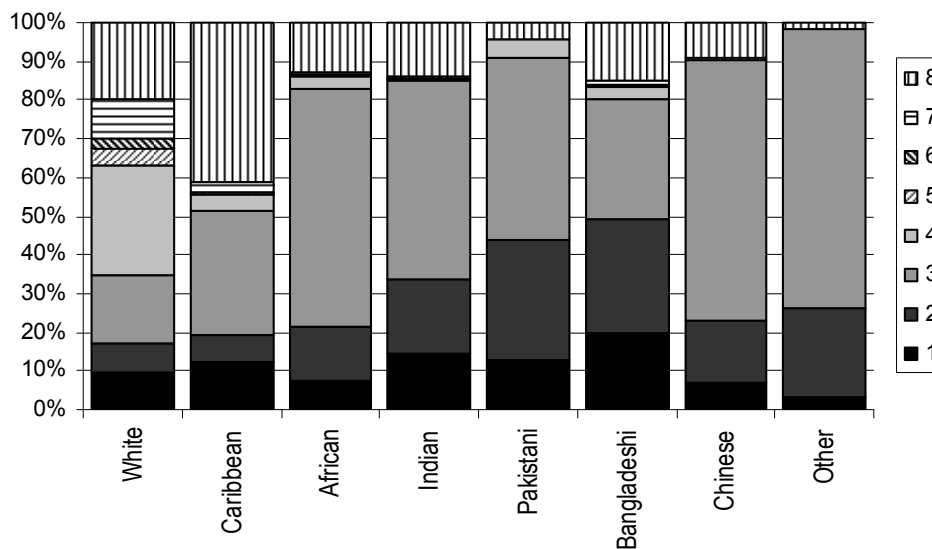


Figure 3 takes the comparison of the impact of net migration and natural change a step further by summarising the distribution of Webb population change types (see figure 1) for the 408 British districts for each ethnic group. The net migration and natural change in this graph are for Britain as a whole (net migration therefore being international migration). The patterned bar segments show the proportion of districts experiencing population decrease; the greyscale bar segments represent population change types experiencing population increase.

For all groups over half the districts had population increase 1991-2001 but it is clear that in Britain's districts different population dynamics are operating for different ethnic group populations. For the White population each type of population change was experienced by some districts whereas for the minority ethnic groups no districts saw population decrease as a result of natural loss exceeding migration (types 5 and 6). Minority ethnic group district population change was dominated by population increase due to net in-migration exceeding natural gain (type 3), and this accounted for the population change in the majority of districts for the Indian, African, Chinese and Other groups. For the south Asian groups, population increase also resulted from natural gains exceeding net migration (in or out) in between a third (Indian) and a half (Bangladeshi) of districts. The largest category of districts for the Caribbean group were those in which population was decreasing as a result of net out-migration exceeding natural gain (41% of districts), and this also accounted for change in a fifth of districts for the White population. The

largest category for Whites, however, was for districts growing from net in-migration exceeding natural loss (28%) whereas this accounted for no more than 5% of districts for minority ethnic groups.

Figure 3: Percent of districts in each population change type, by ethnic group, 1991-2001



The ethnic group differences can be interpreted in terms of recency and type of immigration and demographic structure of the groups. The African group is yet to reach the peak of immigration to Britain during the modern era of migration and its population has therefore been greatly influenced by international migration (Salt 2006). The young age structure of the African population, whose migration to Britain has been predominantly for work, study or refuge, results also in a high rate of natural increase. In comparison, the Chinese group has a much older age structure thus a smaller proportion of the population in reproductive ages. Also, although the immigration rate was high, this is largely accounted for by student migrants who are less likely to start families. Indeed, in 2001 73% of people of Chinese ethnicity aged 16-24 who were born outside Britain were full time students (50% for the African group)ⁱⁱ.

The stability of the White population is clear: there was little population growth and the population age structure is mature. In the South Asian groups, natural change was greatest for Bangladeshi then Pakistani and then Indian as expected by the younger age structures of the first two groups which is a result of their more recent arrival in Britain. The higher levels of immigration for Bangladeshi and Pakistani groups than Indian can also be interpreted as a result of their more recent arrival and the greater significance therefore of immigration for family reunification (Salt 2006).

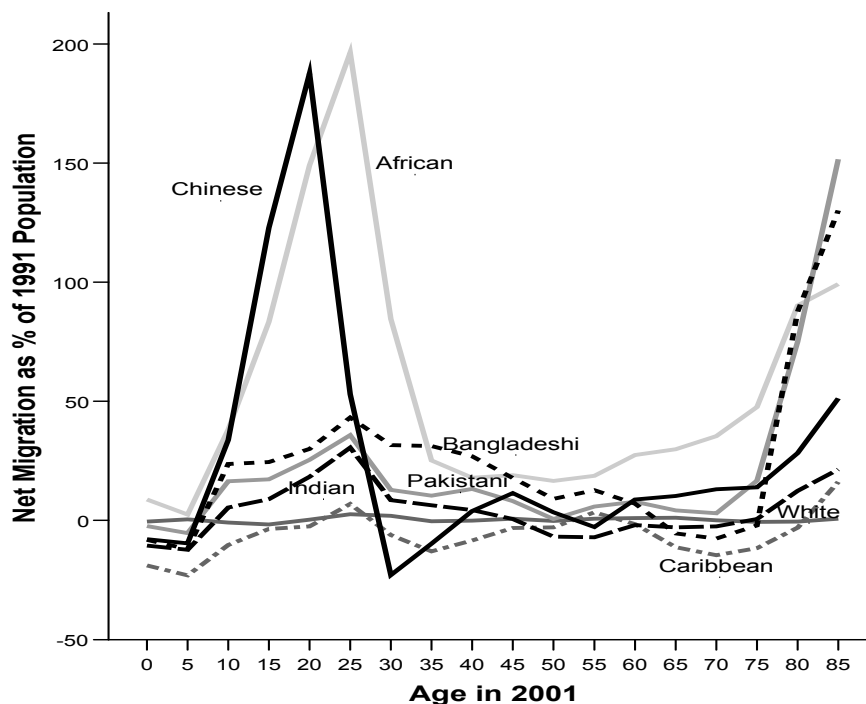
The Caribbean group is the exception with only slight overall growth due to natural change. Natural change was lowest second only to Whites, as would be expected from the relative timing

of the major immigration of this group. The emigration, which persists when transitions between ethnic groups are considered in the alternative estimates of table 2, is likely to be a reflection of return retirement migration to the Caribbean.

These interpretations of ethnic group differences being accounted for by age structure and immigration history are corroborated by figures 4 and 5. Figure 4 shows net international migration over the decade for ethnic groups by age. In particular, the immigration of young Africans and Chinese is striking. Immigration of ages 10-50 (in 2001) of the South Asian groups is also notable. The Caribbean group showed immigration only at ages 20-30 and at ages 50-60. The emigration age profile reflects both family and retirement migration.

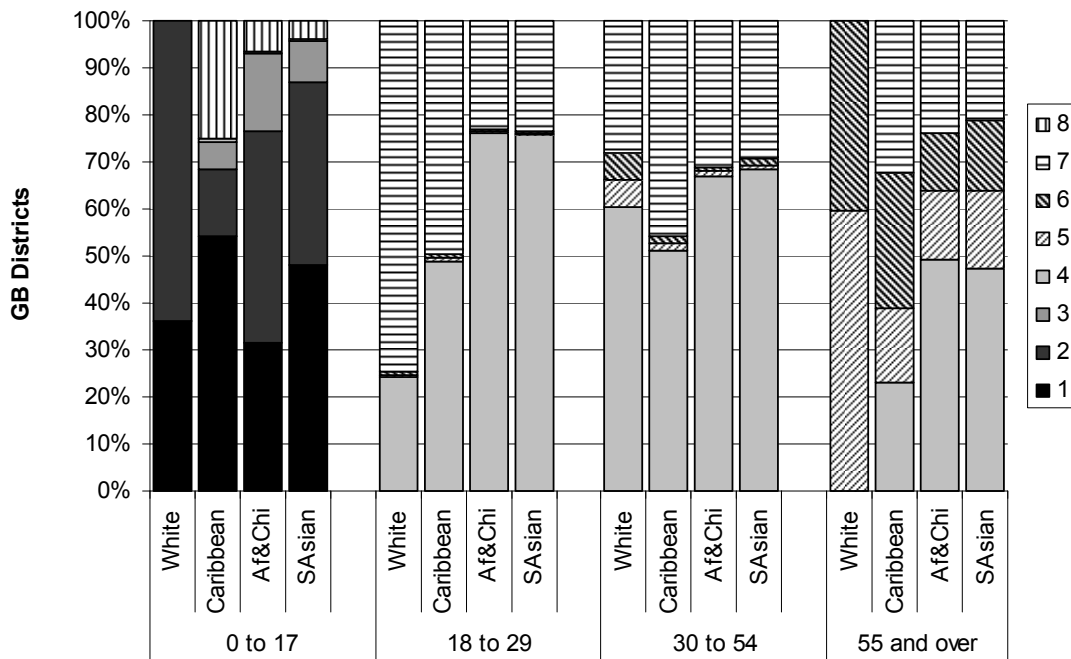
Figure 5 also shows how the impact of migration varies with age. This graph uses the Webb typology detailed in figure 1, categorising districts according to their population change type for four broad age groups. Each age group has four columns, one for each ethnic group. The four groups used are the White and Caribbean groups as above, the three south Asian groups aggregated and the Chinese and African groups aggregated. The residual other category has been excluded. The aggregations are on the basis of the similarities in population dynamics between the south Asian and the African and Chinese groups as discussed above.

Figure 4: Age profile of net migration to Britain 91-01 by ethnic group as a % of 1991 Population



Source: MRPD Estimates

Figure 5: Percent of districts of each population change type, by age and ethnic group, 91-01



For the 0 to 17 age group there are few deaths so there is natural gain in all districts for all ethnic groups. Natural gain exceeding migration accounts for population change in at least two thirds of districts, and 100% of districts for the White population: International migration has a greater impact for minorities than for the White group. As expected, the impact of migration is high for the African and Chinese children but what is particularly notable is the emigration of Caribbean children. A quarter of districts in Britain lost Caribbean children because emigration exceeded natural gain.

For the other three older age groups there is no natural gain: births are only allocated to the youngest age group. It is therefore not possible for the three older age groups to experience population change types 1, 2, 3 and 8. For ages 18 to 29 only two types of population change are evident: increase from net in migration exceeding natural loss (type 4) and decrease from net out migration exceeding natural loss (type 7). So, for young adults of all ethnic groups, international migration is a more significant driver of population change than deaths. For minority groups the majority of districts saw population aged 18-29 population increase as a result of immigration but for Whites the figures was only a quarter – three quarters of districts lost young White adults due to emigration.

Adults aged 30 to 54 experienced the same population change types as young adults. There was least variation between ethnic groups at this age, primarily because the impact of immigration increases for the White group. Deaths also begin to have an impact for the White

group: a tenth of districts lose population aged 30 to 54 because natural loss exceeds migration. The same is not evident for minority groups at this age.

However, the minority bars for age 55 and over are similar to the White 30 to 54 bar: international migration is still a major force of change but deaths play the major role in up to 45% of districts and particularly so for the older Caribbean group. Migration nowhere has a greater impact than deaths for Whites aged 55 and over.

For all ethnic groups the shift in population change type with increasing age is similar: increase in young populations from natural growth being greater than migration; natural loss of young adults exceeded by migration; the majority of districts gaining 30-54 year olds through migration; and population decrease mainly due to natural loss for those aged 55 and over.

These results provide some clear messages about national population dynamics of Britain's ethnic groups in the 1990s. First, it is clear that natural change is the primary driving force for the population as a whole and for the Indian, Pakistani, Bangladeshi, Caribbean and Other groups separately. This is expected given the young age structure of these group whose main immigration to Britain was between the 1950s and 1980s. Migration had the greatest impact for the groups that have seen large scale immigration more recently – the Chinese and African.

Aside from the differences in natural growth resulting from different age structures, different immigration experiences are affecting the population dynamics of each group. The African and Chinese immigration is predominantly of young adults and there is little emigration. Caribbeans, however, experience net emigration reflecting family and retirement migration. There is in migration of young and adult populations of South Asian ethnicities, likely to be chain migration for family formation and reunification. For the White population, emigration of young adults is notable.

These results give an explanation for the continued clustering of Britain's population by ethnic group: natural growth is occurring in-situ accompanied by immigration to places where co-ethnics live. When population change is examined by age the shift in population dynamics through the life course is common for each ethnic group. Similar demographic experiences are shaping population change; they play out differently as a result of the differences in ethnic groups' age structures and immigration histories.

The sub-national picture of net migration and natural change

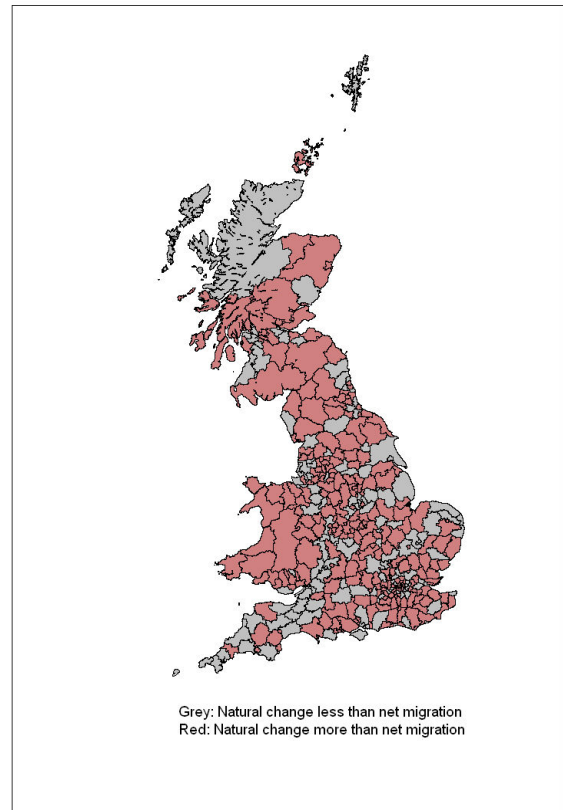
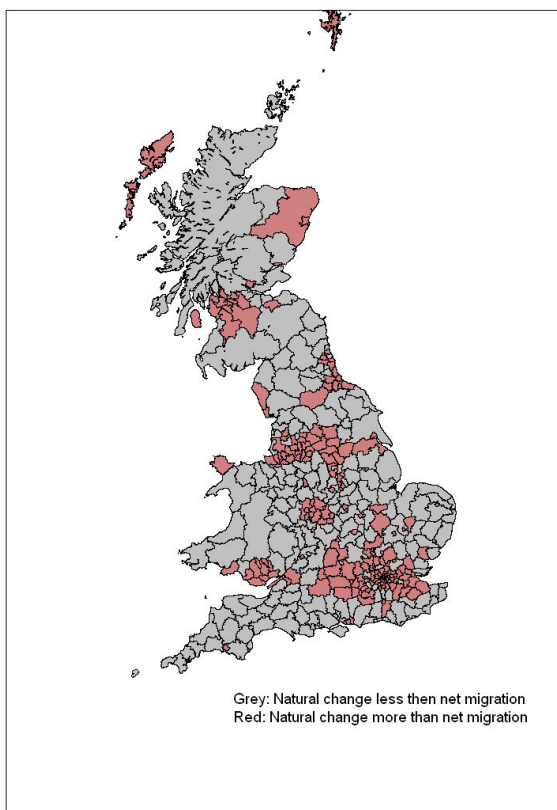
Maps of net migration and natural change for districts of Britain and ethnic groups reveal complex geographies of population dynamics. Figure 6, for example, shows both the differing impact and the differing geography of natural change for the White and Bangladeshi population

for districts of Britain. Whites saw natural growth in the most urban areas whereas for Bangladeshis natural change had a greater impact than migration in most areas. This section uses two types of classifications of districts – urban-ness and minority concentration - to try to unravel the patterns.

Figure 6: Natural Change or Net Migration as the main driver of population growth 1991-2001 for districts of Great Britain

(a) White population

(b) Bangladeshi population



Population dynamics for districts categorised by urban-ness

Components of population change have been calculated for districts of Britain categorised according to their urban-ness and rural-ness. The results are shown in table 3 and figure 7. For the population as a whole we expect migration patterns to demonstrate counterurbanisation (Champion 1989, Simpson and Finney forthcoming 2008). Natural growth will reflect the distribution of the productive age population.

It is clear from table 3 that the pattern of natural change across the spectrum of urban to rural areas was quite different for the Whites compared to Minorities. Natural change resulted in little population change for Whites in either urban or rural areas. Greatest natural change for Whites was in mixed urban and rural areas and there was slight population growth due to natural increase

in London, both inner and outer. Overall there was slight natural decline of the White population in other urban and rural areas. The white population was the only group that experienced natural decrease in any of the area categories. For the minority ethnic groups taken as a whole there was little variation in natural growth over the decade in areas of differing urban-ness. Natural growth added around a quarter to 1991 population in all area types.

Table 3: Net migration and natural change 1991-2001 as a % of 1991 population, for Whites and Minorities in districts categorized by urban-ness

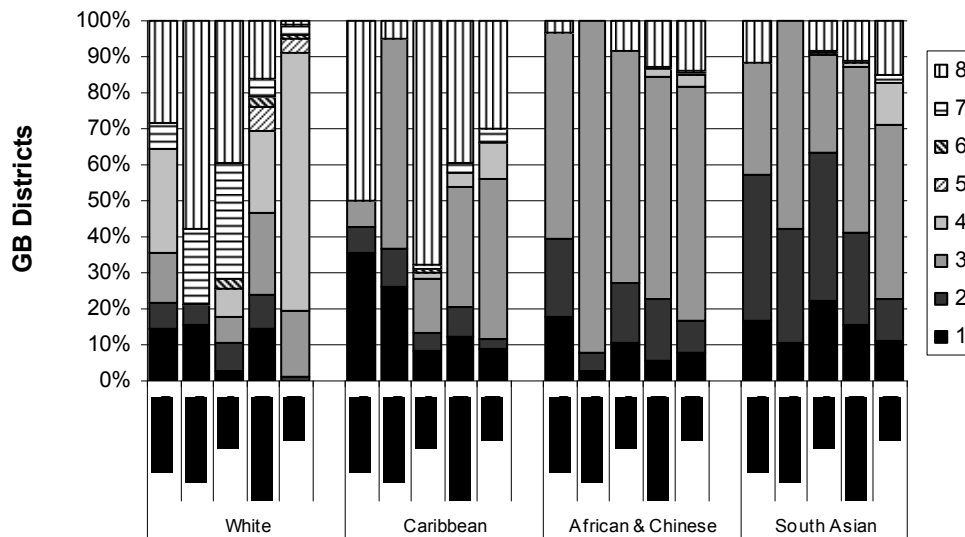
	Net Migration		Natural Change		Population 1991	
	Whites	Minorities	Whites	Minorities	Whites	Minorities
Inner London	-0.6	9.1	1.0	25.9	1,877,349	721,938
Outer London	-5.4	28.8	1.0	21.7	3,471,462	758,565
Cities	-3.2	6.1	0.0	22.6	17,349,325	1,257,889
Other Urban	1.7	24.2	-0.1	25.4	13,543,574	336,624
Mixed	2.4	26.7	1.5	23.1	10,010,822	266,627
Rural	7.0	34.6	-1.3	24.8	6,189,177	48,011

Migration patterns for districts classified according to urban-ness reveal general patterns of counterurbanisation. The White group experienced a cascade of counterurbanisation over the decade with movement out of London and Metropolitan cities and into smaller cities, mixed urban and rural areas and rural areas. Minorities have net in-migration to all areas as a result of immigration. Migration to outer London was over three times as much as to inner London, and outside London the impact of migration increased with increasing rurality so that it caused a 35% increase in minority populations in rural areas.

If the size of the impact of net migration and natural change on 1991 population is compared, theories of counterurbanisation are further confirmed. Natural change has greater impact in urban areas for Whites and minorities with the exception of migration being greater to outer London for Minorities and to other urban areas for whites. The mixed and rural areas grew more through migration, for all groups, indicating the force of movement towards these types of areas.

These patterns support previous findings and are in line with ideas of dispersal of minority groups from their settlement areas and from urban centres. Natural growth is having an equally big impact in urban and rural areas and migration is having greatest impact outside traditional settlement areas of urban cores. This migration is internal migration (see Simpson and Finney forthcoming 2008) and may also be immigration, reflecting new areas of settlement.

Figure 7: Percent of districts of each population change type, by urban-ness and ethnic group



We can examine these patterns in a slightly different way using the Webb typology (figure 7). The proportion of districts experiencing each population change type over the decade is shown for each of four ethnic groupings for each of the five types of area based on urban-ness. As before the grey shading indicates population increase and the patterned sections indicate population decrease.

There are clearly differences in the predominant population change types between areas of different urbanness and between ethnic groups. Overall, the patterns confirm what we have already seen: natural change has greater impact for minority groups than for the white group and there is a trend of counterurbanisation with migration impacting on more rural districts than other types of districts. For the minority ethnic groups the same effect of moving down the urban hierarchy is seen: a reducing impact of natural gain (fewer districts in types 1 and 2 and more in types 3 to 8). For Whites a similar gradation with urban hierarchy is evident but its character is somewhat different in that urban and mixed, and especially rural areas, were dominated by population increase because in-migration exceeds natural loss.

The differences between ethnic groups are interpretable in relation to their demographics. For the older White group, a higher proportion of districts experienced natural loss, particularly in rural areas (three quarters of districts). Rural districts were the only type of district experiencing any natural loss for minority ethnic groups, though at the maximum this accounted for population change in a tenth of rural districts. For Whites, increased rurality saw natural growth as the

predominant dynamic in a decreasing proportion of districts, and in-migration correspondingly caused change in an increasing number of areas.

The south Asian group's experience differs in the extent of the impact of natural growth which was the main cause of growth in 60% of districts in Inner London and Metropolitan areas, two fifths of districts in Outer London and Mixed areas and a fifth of districts in rural areas. In migration was significant in all types of areas, and caused growth greater than that due to natural change in over 50% of Outer London and Rural Districts. For the south Asian population, natural loss only occurred in rural areas, and in these only affected around ten percent of districts.

The African and Chinese story is very much one of in-migration which exceeds natural gain to cause population growth in at least 60% of districts no matter whether they are urban or rural. This dynamic was particularly strong in Outer London where over 90% of districts experienced it. The pattern for the Caribbean group shares the migration impact to Outer London districts with the other minority groups. However, the Caribbean group is distinguished from the minority groups by the impact of out-migration, which more closely reflects White population change. We know that part of the out-migration is emigration. Caribbean out-migration had greatest impact in Outer London and metropolitan areas, exceeding natural gain to cause population decline in around 50% and 70% of districts respectively.

Population dynamics for districts categorised by minority ethnic concentration

The second method for categorising districts is based on minority ethnic population composition. If 'white flight' and 'self-segregation' are occurring this will be evident in white out-migration from the areas of greatest minority ethnic population and in-migration of minority ethnic groups to the same areas. Natural change is expected to reflect population distribution and so to be higher for all groups in the most concentrated areas which generally represent urban areas that have younger age structures than more rural districts.

Table 4: Net migration and natural change 1991-2001 as a % of 1991 population, for Whites and Minorities in districts categorized by minority concentration

	Net Migration		Natural Change		Population 1991	
	Whites	Minorities	Whites	Minorities	Whites	Minorities
Quintile of Highest Non-White Population	-5.3	15.6	0.1	25.0	1,146,144	631,233
Quintile of High Non-White population	-8.0	13.9	0.2	23.1	2,242,472	727,473
Quintile of Medium Non-White Population	-3.2	10.7	0.5	22.7	3,171,954	678,856
Quintile of Low Non-White Population	-1.4	13.2	0.9	23.3	8,433,909	714,708
Quintile of Lowest Non-White Population	1.6	25.6	0.0	23.2	37,447,229	637,385

Given that minority ethnic populations are unevenly distributed and predominantly urban, we would expect the patterns for population change in relation to districts classed by minority ethnic

composition to confirm the patterns of counterurbanisation. This is indeed the case for the White group. For Minorities the picture is less clear though migration is clearly highest in the lowest concentration areas (table 4). That the pattern is not so clear may partly be a reflection of the migration figures including immigration some of which will be chain migration to areas of traditional settlement. Indeed, previous findings have shown that internal migration is away from concentrations for each group (Simpson and Finney forthcoming 2008) meaning that population growth due to migration in minority concentrations is entirely a result of immigration.

The impact of natural growth increased from the lowest minority ethnic quintile to the highest quintile for all minority ethnic groups. This may be a reflection of the minority ethnic urban populations having a younger age structure than populations elsewhere. However, there was little variation in the impact of natural change across the quintiles of minority ethnic population. Areas of minority concentration are losing White population through migration and slightly through natural change, losing minorities through internal migration and gaining minorities through immigration and natural growth. The most mixed areas are growing through all components of change.

Figure 8: Percent of districts of each population change type, by minority concentration and ethnic group

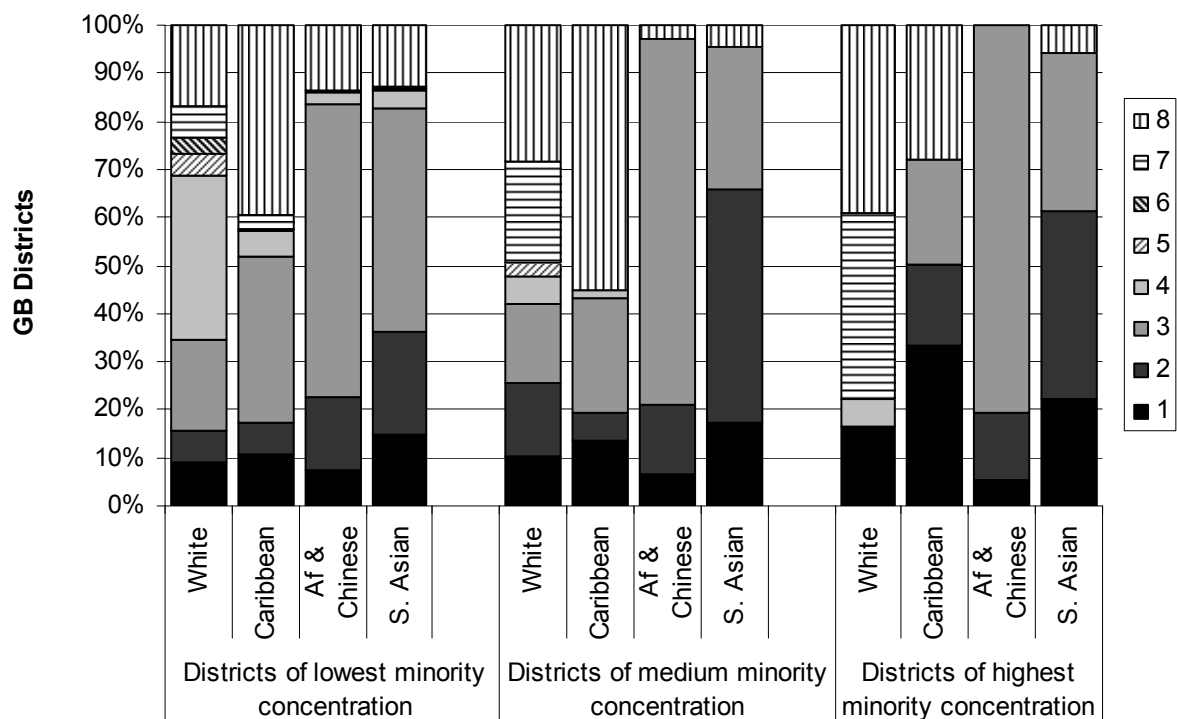


Figure 8 shows the percent of districts of differing minority concentration experiencing each population change type. In concentrated areas at least 70% of districts (and 100% for African and

Chinese) saw growth in minority populations while only a quarter had White population growth. This observation is what has led to claims of ghettoisation. However, the demographic dynamics question racialised interpretations. The impact of natural gain increases from lowest concentrations to medium concentrations to highest concentrations for the Caribbean and South Asian groups so that it is the primary driver of population growth in over half the concentrated districts. There is a corresponding decrease in the proportion of districts that grew due primarily to in-migration. It would be difficult to interpret the dynamics of family formation as having racialised motivations.

For the African and Chinese we again see the impact of in-migration which we know is largely immigration of young adults, and which is experienced by this group in highest, medium and lowest concentration districts. The White population is gaining population in 70% of lowest concentration districts mainly through net in-migration. However, out-migration from medium and highest concentration districts caused population decrease. It is the contrast between the White out-migration – consistent with counterurbanisation as seen above – and minority natural growth that has been interpreted as retreat.

Conclusion

Population change and the geographies of population change for different ethnic groups in Britain is complex. There are also challenges to understanding population dynamics because the data that is required is limited or non-existent. This paper has entered into the debates about mixing and clustering of ethnic groups by taking a demographic approach. The aim has been to see if demographic interpretations offer an alternative to the racialised explanations of retreat and flight.

For the first time, sub-national estimates of births, deaths and net migration have been produced for ethnic groups in Britain. These estimates have allowed the population dynamics of ethnic groups over the period 1991 to 2001 to be explored, revealing patterns and processes that accord with the demographic compositions and immigration histories of ethnic groups.

Each ethnic group has its own story, the beginnings of which have been revealed in this paper. Nationally the relatively old White population is dying and young adult Whites are emigrating. Three quarters of Britain's districts lost Whites age 18-29 because of emigration. In contrast, minority ethnic groups are in-migrating, and this is particularly the case for the African and Chinese groups who form a major part of recent immigration streams. These immigrants are young, and assuming they remain in Britain, the natural change component of growth can be expected to increase its share in the future. For the south Asian populations, natural growth is the

main driver of population change. This is not surprising given the young age structure of these populations. Caribbeans have also seen natural growth but what distinguishes their population change is emigration, of families and of those in retirement ages.

Within Britain there is certainly geographical variation in how populations are changing. However, different types of areas act similarly for different ethnic groups. To the extent that it is possible to identify demographic sequences, the shift in population change types with age and down the rural hierarchy is similar for each ethnic group. In particular, counterurbanisation is evident for Whites, and for minorities outside London. Mixed and rural areas grew most through migration, representing dispersal from urban centres and areas of traditional immigrant settlement.

Dispersal areas are not solely growing through in-migration. Natural change has as big an impact in relation to population size in mixed and rural areas as it does in urban areas. However, natural change is the predominant force of growth in more districts in urban areas than rural areas. Similarly, it is the main driver of population change in areas of minority concentration, accounting for change in over half these districts for the Caribbean and south Asian groups. That concentrations are growing as a result of natural change is a reflection of the youth and urban location of these minority groups at this point in time, and it would be difficult to attach racialised motivations to family formation.

The main message, therefore, for how we think about ethnic group population change, is that demographic explanations take us a long way in understanding the processes that have occurred. There is a common experience of dispersal, or counterurbanisation, which combines with the particular demographic experiences of different groups: natural loss for Whites, emigration for Caribbeans, immigration for African and Chinese and natural growth for South Asian groups. These processes produce, simultaneously, increased mixing and increased clustering and show that there is no contradiction between these phenomena. There has previously been thought to be a contradiction because one large component – natural change – has been missing from discussions. This has led to claims that have over-racialised the explanations for population change and have made assumptions about group conflict and retreat.

What this paper has revealed is clearly not the full picture. The stories of each ethnic group need to be fleshed out with more detailed investigation of how their populations have changed. Where are people of each ethnic group moving – is it the same urban and rural areas, or different ones? Is immigration to the traditional settlement areas, or to areas which can be seen as dispersal areas? Why is outer London experiencing something different for minorities than for Whites? What is behind the Caribbean emigration? Are the population changes associated with greater

equality – what is the socio-economic significance of the migration? Is there convergence in fertility, health and mortality patterns between ethnic groups? And the question that cannot escape the political ring: to what extent is racism a motivation for migration? What this paper has done, however, is demonstrate that a demographic approach, producing and analysing unique estimates of components of population change for ethnic groups, raises a challenge to those who have assumed Britain is ‘sleepwalking to segregation’ and on track towards ‘chronic cultural conflict’.

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