
A nation still dividing: the British census and social polarisation 1971–2001

Danny Dorling, Phil Rees

School of Geography, University of Leeds, Leeds LS2 9JT, England;

e-mail: d.dorling@geog.leeds.ac.uk, p.rees@geog.leeds.ac.uk

Received 28 April 2003; in revised form 12 May 2003

Abstract. This paper presents an analysis of the degree to which the population of Britain has become more or less geographically polarised as compared with 1991 and earlier censuses. We use the Key Statistics for local authorities from the 2001 Census, released on 13 February 2003 by the census authorities. All of the variables from the 26 Key Statistics tables which can be compared over time with the 1991 Census are examined. The analysis is then extended for a subset of variables that were similarly measured in 1971 and 1981. We conclude that for key aspects of life in Britain, as recorded by the censuses, the nation has continued in the 1990s to divide socially geographically, often at a faster rate than was occurring in the 1980s or 1970s. Where there appears to have been a reduction in polarisation it tends to have been for those aspects of life which are now poorly measured by the census. The paper concludes with speculation about the possible reasons for the continued division of the country into areas now more easily than ever typified as being old and young, settled and migrant, black and white, or rich and poor. Finally the potential for the continued sociospatial polarisation of Britain is discussed. The paper begins with a fictional vignette.

Introduction

The roads have been gridlocked for seven nights and seven days now. Every van, car, and lorry in Britain is piled high with the belongings of millions of households. Petrol is running short. On a trivial level, the Royal Mail, even if they could get through the traffic, cannot cope with the millions of postredirection requests. Neither can the utility companies, the tax authorities, or the dozens of other public and private bodies deal with the changing of more addresses in a week than normally occurs in a year. More fundamentally, much of the existing fabric of society is at risk. Private schools, hospitals, golf clubs, gyms, even working men's clubs—that relied on their local clientele for business—are facing ruin. So too are much of the trappings of the state from job centres, to primary schools, from post offices to needle-exchange centres—the professionals who ran many of these amenities are having to look for new employment. But that is the least of their worries, as they too are on the move, swapping their comfortable suburban homes for inner-city flats, moving into areas they would never normally consider living in, sharing streets with people whose skin is a darker shade than white. A million university students have been sent home or, more likely to other people's homes and will have to conduct their studies as 'online distance learners'. It is as if the children were being evacuated again as they were in 1939, only now the evacuation is happening to people from all groups in society and in all directions. Large numbers of the elderly are swapping their seaside bungalows for city flats. The unemployed are being scattered across the countryside. Affluent households are trying to park their multiple cars in streets never designed for more than one car per household (if that). Married couples are returning to the city centres where they spent their single years and swapping their homes with some of the groups of single students displaced from those same city centres. There is political mayhem. Nobody can predict any more which constituency will be safe for which political party. The only sure bet is that most will be marginal. Everybody is unsettled and only the estate agents are happy.

What was happening? The year was 2005. The government, having just won a third term of office and having spent months receiving gloomy but confidential post-2001-Census consultancy reports saying there was no way they would achieve their targets for a 'fairer Britain' if social polarisation continued, had decided to act. The day after the election they published the names of people who would have to move home and their new addresses. Social engineering through equality of opportunity had failed and a large part of the population of Britain was simply to be ordered to move home. There would be less fuss, they thought, if this were done quickly. All government targets on reducing inequalities between areas would be achieved immediately. Longer term targets such as the elimination of child poverty would become possible in a less polarised country. After all, they had transferred monetary policy to the Bank of England in a day, they had kept to Conservative spending plans and won a second landslide victory, they had started a Middle East war as part of a wider war, and had won a third election victory. The voters might be angry at first, but only a minority would actually have to move and it was 'for the good of the many' after all.

It couldn't happen—could it? No, at least not as quickly as this. For a start, there are simply not enough removal vans. But it has happened, at least in reverse, over the last twenty years. Slowly but surely and relentlessly the population of Britain has divided geographically on social lines. This polarisation grew in the 1990s—coincident with the Blair and Major regimes—under which the country divided more rapidly in some ways than occurred, more visibly, under Thatcher. Under Callaghan and Heath before her the country actually came together socially more than it grew apart (perhaps partly because of the influence of the Wilson government before them, but that is another story). What matters is that Britain, which divided so dramatically and obviously in the 1980s, as the mines were closed and the yuppie houses were built, divided even more rapidly but perhaps more surely in the 1990s, as university access was opened up only to the middle classes and a million large private pension plans were extended.

The clearest way in which social polarisation is expressed is through its geographical manifestations—the big house on the hill overlooking the slums (Mohan, 1999). The importance of geography to society is hard to hide and it is only measured every ten years in the national census. What the latest census showed, much to the surprise of most pundits, was continued and in places accelerated social polarisation. It is not just that "those inner cities", as Margaret Thatcher termed them, are as divided from the rest of society as they were in, say, 1983 or 1991—they are now even more different. It is not just that the heart has been knocked out of the manufacturing north of the country; it is that what has replaced the mills, steel works, and shipyards absolutely pales by comparison with the growth and wealth of the service sector in the south (Dorling and Simpson, 2001).

The last four censuses of population were the first four to be fully computerised, allowing three decades of geographical change to be summarised and compared. Britain only "came together" (a favourite phrase of Tony Blair's) in the 1970s. It grew apart in the 1980s and then divided further still, in the 1990s. Census information allows us to compare only decades. It does not allow us to pinpoint the exact dates at which trends change. It would not, however, be foolish to suggest that the trend to greater social integration by area changed at some point between 1977 and May 1979; and that the trend towards greater social polarisation in Britain has not changed greatly again since then. The country is extremely divided and continues to divide. Only a census can both reveal the extent of this divide and allow its geographical reality to be seen and we get to see such a thing only once a decade.

This paper presents the data and analysis that back up the simple and perhaps dramatic argument made above. The analysis is still preliminary but, as social scientists

working in Britain, we had been led to believe that the 1980s were unusually bad times for social division (Dorling, 1995a; Johnston et al, 1988). We were told things had begun to turn around under the more benign Conservative government of John Major and the first Labour government for eighteen years. It is true that official poverty measures stopped increasing after about 1991. It is true that Gordon Brown, the Labour Chancellor of the Exchequer (Finance Minister), introduced a plethora of in-work and/or child-linked benefits. It is also true that officially measured unemployment and inflation are at lows not seen in a (short) lifetime. However, what also now appears true is that, in the end, all this achieved was to slow down the rate at which society was polarising in some ways; but society continued to polarise in other ways and as a whole. For some key groups in society this polarisation was at a faster rate than seen between censuses before.

With hindsight it is easy to explain why society has continued to polarise, but we did not anticipate the need to explain this before analysing these statistics. A society that lives for a decade with levels of 25% of households living in poverty will be a society within which people who can live apart, will live apart. Such levels of poverty are recorded in official statistics. In May 2003 that measure rose to its highest level ever recorded. Levels of poverty such as this were probably last experienced in the 1930s (see Shaw et al, 2000). A society that gives the rich more of the means, in terms of money, to pay for their home to be apart from other people, for their children to be educated apart, or for their health to be repaired apart is likely to become more divided. A society which continues to build and widen roads, while the real price of cars falls, should not be surprised to find those who can living further and further away from those who cannot. What was started some twenty-five years ago will take huge efforts to reverse. Not the enforced movement of millions of families, perhaps, but whatever could be done would be unlikely to be popular with swing voters living in swing constituencies. This, perhaps more than anything else, leads us to conclude the paper by considering what will likely happen if nothing is done to reverse this trend.

But first, the evidence.

Data and methodology

On 13 February 2003 the 2001 Key Statistics were released by the UK Census Authorities (GROS, 2003; ONS, 2003a; 2003b). They consisted of some twenty-six tables of social variables for 408 local authorities within Britain as well as for Northern Ireland [see ONS (2003a) and links from there for Northern Ireland]. These can be compared with 1991 Census data which have both been reaggregated to 2001 local authority boundaries and meticulously adjusted to compensate for over a million people who were not recorded by that census (Dorling and Simpson, 1994; Dorling et al, 2003; Martin et al, 2002; Mitchell et al, 2002). Similar exercises were carried out with a more limited set of comparable 1971 and 1981 Census datasets. The changing proportions of different groups of people and households are then broadly comparable [see Dorling (1995b, table 1.13) for why the changing population base is largely irrelevant]. The index of segregation is calculated for each comparable variable for 1991 and 2001 and the change in segregation is measured and commented upon. A smaller set of variables is compared in a similar way for earlier censuses.

The index of segregation, as used here, is the index of dissimilarity between a group and the whole of the population. This is the index we use to measure the degree to which a group is spatially polarised. The index of dissimilarity between two groups is half the sum over all areas of the absolute differences between each group divided by its respective total population. It ranges between 0 and near 100%.

Alternatively it can be expressed as:

$$D_{ab} = \frac{1}{2} \sum_{i=1}^N \left| 100 \frac{P_a^i}{P_a^*} - 100 \frac{P_b^i}{P_b^*} \right|,$$

where D_{ab} is the index between groups a and b (b in our case is the population as a whole), P_a^i is the population of area i of group a , * represents all areas, and N is the number of areas being considered (408).

The index can be expressed in words as half the sum of the absolute differences between the proportion of group a in all areas living in each area and of group b in all areas living in each area. Thus if there are three areas containing 200, 300, and 500 people each, of which 50, 150, and 300 people are married, the index of segregation for married people across the three areas is:

$$\frac{1}{2} \left(\left| 100 \frac{50}{500} - 100 \frac{200}{1000} \right| + \left| 100 \frac{150}{500} - 100 \frac{300}{1000} \right| + \left| 100 \frac{300}{500} - 100 \frac{500}{1000} \right| \right) = 10\%.$$

To remove all segregation 10% of people would have to move area, some 100 people. For example, 50 single people could have to move from the first area, swapping places with 50 married people from the third area. Alternatively, 100 single people could move from the first to the third area, and so on. See Johnston et al (2003) for a critique of the use of single measures such as this (our defence of using a single measure is that we have so many variables to measure and only one spatial scale, at time of computation, at which to measure them).

The index of dissimilarity is, in effect, the measure described in fictional terms in the introduction to this paper. It is the proportion of people or households who would have to move home, across local authority boundaries, were that group to be equally represented everywhere. It differs from the fictional measure above in that in our measure we assume that there are empty homes for excess populations to move into and thus only (some) people in a group living in a local authority where that group were overrepresented would have to move. People and households are not ‘paired up’ to move as the fiction’s enforced migration would require. The measure is the simplest of segregation indices to use to describe the changing level of geographical social polarisation in Britain.

Northern Ireland is excluded because of the volume of work needed to generate relevant variables from the 1991 Small Area Statistics (SAS) for Northern Ireland (and even more work required to do this for 1971 and 1981). It could also be argued that spatial polarisation in much of Northern Ireland has a special meaning that requires its own analysis. Similarly people living aboard ship are excluded because they were not included in the 2001 Key Statistics and are now very few in number. The “missing million” of 1991 are included as they have been “brought back home” (Dorling et al, 2003). There are now debates over whether quite so many were missing in 1991, whether people were missing from the ‘one-number’ 2001 Census, and over the accuracy and population definitions of the 1971 and 1981 Censuses. Whatever the truth to current debates over the accuracy of the 2001 Census, they are not of any consequence for this study. The minor changes to the data suggested, when viewed from a national perspective, would have no noticeable effect on the results reported here. This is in sharp contrast to debates concerning differing rates of representation and attrition in cohort studies which are problematic, but which also suggest that younger generations in Britain live much more polarised lives than did their parents.

The first five tables in the paper use the same format to make the presentation of so many statistics more palatable (and the sixth follows a similar format). The simple proportions of each social group are shown first, and then the relative change

in those proportions [$100(2001 - 1991)/1991$]. Following these three columns are three columns showing our segregation index for 2001, for 1991, and again the relative change in that index. Relative change is shown because it is, arguably, more readily interpreted. If a group has doubled in size its share of the population that share will have risen by 100%. Similarly if the degree of its segregation has doubled (that is, if all that increase had been disproportionately concentrated within areas where the group was already most prevalent). It should, however, be remembered that a large relative change can involve only a small number of people or households where a group is small, and similarly what appears to be a small relative increase for a large group may involve very many people. Readers who are more comfortable with absolute rates of change (2001%–1991%) can calculate these from the tables.

The remainder of this paper considers, first, five ways in which the changing nature of the population can be examined using the Key Statistics for 2001 and earlier censuses. These are:

1. People not living in households, where and how they are housed.
2. All people living in Britain and how they are differently distributed by age.
3. All people by various forms of identity: sex, marital and migratory status, birthplace and ethnicity.
4. All households in Britain by tenure, amenities, composition, illness, and car access or ownership.
5. All adults of working age in Britain by employment status, hours, industry, occupation, and qualification.

Next a sixth and final table is presented encompassing elements of all five tables above, but only for the minority of variables that can be compared between all four of the last censuses. Finally we conclude by discussing the results, partly in terms of the rate of change of the rate of change of polarisation.

It should be noted that it was not possible, for obvious reasons, to compare characteristics such as ‘religious affiliation’ and ‘caring’ which were examined for the first time in the 2001 Census. Similarly, questions which had greatly changed their nature or target group could not be compared, such as travel to work (including travel to school in Scotland) or the nature of family composition (a very different question was asked in 2001). Where we judged the changes in question wording, categories, or definitions to be minor, or probably minor, we have included the comparisons with warnings. The changing legal minimum age of working probably has little effect on 1971 to 1981 comparisons; the changing nature of the question on unemployment in 2001 (making it harder to be unemployed) may well have had an effect but it would be very wrong not to compare unemployment across time. We judged that the effect was unlikely to be spatially biased and so affect this study too much. A similar judgment was made with respect to the changing wording of the ethnicity question, to the changing meaning of marriage, and so on. The biggest restriction on what we could compare, by far, was through what was included in the twenty-six tables of the 2001 Key Statistics. However, without that restriction it would have been difficult to know where to begin and difficult to justify our choice of variables. We have included all those that we could. We did not choose them. They were chosen by census officials in consultation with users. Unless those census officials know a lot more about the changing social structure of Britain than we thought they did and unless they had a particular axe to grind it seems unlikely they chose them to highlight growing polarisation. Our defence of our choice of variables is that we did not choose them.

We apply a similar defence over our choice of areas. As we write, 2001 Census data are available only for 408 local authorities. We could not have used smaller areas. We have ensured that all the comparable data from the 1971, 1981, and 1991 Censuses have

been reaggregated into these 408 areas. It could be argued that part of the reason that people have become more polarised by area is that the size of 'functional' cities has grown. Boundaries that once encompassed whole or nearly whole cities now encompass only their cores and so, of course, the differences across the boundaries appear greater. There may be a little truth in this. However, we are using contemporary local authority boundaries and we find reduced polarisation at the time when counterurbanisation was strongest (Champion et al, 1987). Similarly, we would undoubtedly find much higher levels of polarisation and perhaps greater change were we to look beneath the local authority level down to near street-by-street patterns but those data, as we write, have yet to be released.

The discussion below focuses on a large number of statistics—this is the nature of census research. It is vital to remember at all times that what is being discussed is the only attempt the state makes to record aspects of the lives of all the people of Britain that now covers, in sufficient details for comparisons over time to be made, the majority of the lives of the majority of people, albeit for only four points in time. The tables below compress a small part of the meaning of over 100 million lives (survivors over three decades plus flows into and out of the population) into just a few dozen numbers. Given that, they are, perhaps, not detailed enough. But this is just the first of many analyses that will be made of these census statistics.

Less care, more containment, and more privatisation

Between 1991 and 2001 the population of Britain increased by 1.5% to 57.1 million people. By 2001 almost a million of those people were living as residents in communal establishments. A large number of these people have a limited choice over where they live, ranging from criminals on remand, to school children encouraged to apply for a place in an Oxbridge college. These people are almost always forgotten in analyses of the censuses despite being such a large number overall. The number of residents of such establishments who were not staff rose by 29% in the decade (see table 1), twenty times faster than the population as a whole was increasing. This occurred despite the number of communal establishments in Britain falling by about two thousand to 51 521 as enumerated in the 2001 Census. It also occurred despite falls in the population living in most kinds of communal establishments. The principal reason for the rise in the numbers of people living in communal establishments in Britain is almost certainly a huge rise in the populations housed in prisons, hostels, hotels, student halls, or defence establishments. However, the Key statistics released to date do not distinguish between the various 'other' categories of establishments into which these listed all fall (most importantly prisons or student halls of residence). As an aside, if the forced migration fiction that began this paper appears too fanciful to be true, consider the process by which the populations of particular communal establishments were increased or, for a smaller but highly significant group, the increase in traffic on particular days of the year needed to transport university students and their ever-expanding range of essential goods between home and university.

What the 2001 Key Statistics do allow us to see is that the populations housed in NHS hospitals have halved over the decade despite an ageing population. The fall is greatest in nonpsychiatric hospitals. The populations housed in local authority and housing association care homes have fallen similarly (as have the populations, perhaps thankfully, of children's homes). Private nursing and residential home populations have increased by only 8% and 3%, respectively. The populations being housed in 'other medical and care' establishments, which include private hospitals, have more than doubled; but the huge increase of 179% from an already high base has been in populations housed in the rather Stalinist titled 'other establishments'. A large part of

Table 1. Residents in communal establishments.

Proportion of all people living in Britain who are residents in	Distribution (%)			Polarisation (%)			SAS cells
	2001	1991	change	2001	1991	change	
All communal establishments (not staff) [b]	1.64	1.28	29	23	17	31	9T3+10T3
NHS psychiatric [d]	0.03	0.05	-53	49	64	-23	29T3+30T3
NHS other [e]	0.04	0.10	-57	38	41	-8	39T3+40T3
Local authority medical and care [g]	0.08	0.20	-61	25	14	76	69T3+70T3
Housing association medical and care [h]	0.02	0.04	-52	46	39	17	79T3+80T3
Other nursing homes [i]	0.26	0.24	8	19	26	-26	89T3+90T3
Other residential care homes [j]	0.32	0.31	3	23	28	-17	99T3+100T3
All children's homes [f+k]	0.01	0.02	-57	41	30	39	109T3+110T3
Other medical and care [l]	0.03	0.01	111	40	73	-45	49T3+50T3+59T3+60T3
Other establishments [m]	0.87	0.31	179	39	37	6	119T3+120T3+159T3+160T3

Denominator: total usual population (corrected for underenumeration)

cell 2 in SAS header line

Source: 2001 Key Statistics table 23, denominator [le] and 1991 Census covered for underenumeration (LCT), see GROS (2003), ONS (2003a), and Mitchell et al (2002).

Proportions are of the total population at each time and change is relative change. Note the letters after each variable refer to the variable column identified in the printed (pdf) Key Statistics Tables. They should be read as KS23 column [letter]. The denominator [le] implies that the denominator variable used for the 2001 statistics in this table is taken from column 'e' (2001 population, all people) of Key Statistics table 1 (usual resident population). Because all the numerator variables are taken from the same table, 23 (Communal establishment residents), the table numbers are omitted from the variables descriptions in this table.

The 1991 Small Area Statistics cell numbers used are as listed in the final column. The data have been corrected for underenumeration in 1991 by Mitchell et al (2002) and have been reaggregated from enumeration districts and output areas to the boundaries of local authorities in 2001. In the list above '29T3' implies cell 29 from table 3 of the 1991 Small Area Statistics (Nonstaff residents, male, in NHS psychiatric homes and hospitals). The 1991 denominator population is taken from the Small Area Statistics header line in 1991 which was the usual population as counted without suppression. This has been adjusted to allow for underenumeration.

this increase might be due to rising student numbers (see below), but prison numbers have risen faster than these in relative terms as have the numbers of homeless. We will have to wait until full details are released to know quite what has led to such a huge rise in the proportions of people in Britain no longer living in households.

Columns 4–6 of table 1 show the results of a calculation of the proportions of people who would have to be moved between 2001 local authorities were there to be an even spread in the provision of communal establishments. In other words, what proportion of each group of people currently (or in 1991) living in a communal establishment would have to move were each local authority to have the national average proportion of people in such accommodation? This is commonly called the index of segregation (the version of the index of dissimilarity that was defined earlier). Note that relative change is shown in the sixth column. Absolute change in the index can be easily calculated from the table by subtracting the 1991 column from the 2001 column, but relative change is more difficult to calculate given that no decimal places are shown.

Overall 23% of the residents of communal establishments would have to move, a rise in the geographical polarisation of this group from society as a whole of 31% over the decade. That rise, however, masks a growing evenness in the distribution of NHS facilities (as facilities have been cut most where there were most) as well as of private hospitals, nursing and residential homes (which have grown most where there were least). The overall geographical polarisation is due to a polarisation in the provision of places in local and health authority care and children's homes (cut most where there were least) and in the provision of 'other establishments'. Clearly growth in university halls of residence and defence establishments will have helped lead to this, but also the concentrated building of prisons in poorer parts of the north of England, such as the infamous 'Donny-Archipelago' cluster of private prisons around Doncaster.

The 31% increase in the polarisation of people living in communal establishments means that now some 23% or 212 000 people would have to be moved were our national provision to be made equitable. For a longer historical perspective table 6 (discussed below) shows that, as large institutions such as Victorian asylums were closed in the 1970s and 1980s, polarisation of people in communal establishments by area fell. It is only in the 1990s that such polarisation rose. The impact is that the residents of communal establishments now live further away from the population as a whole than they used to in 1991. Polarisation would fall were there, for instance, to be adequate prisons in every local authority area so that prisoners could be housed near to their families' homes and similarly for other establishments. It could be argued that, perhaps, the increased concentration reflects an increase in the need for these various facilities to be concentrated. The medical and care facilities being concentrated most where the population is most of need of them (or most able to pay for them in the private case). However, such polarisation would simply then reflect the more general polarisation of the population not housed in communal establishments and so it is to them that we next turn.

A population ageing and dividing by age

The population of Britain is ageing and that ageing is occurring unevenly across the country as people have both moved and died in different proportions in different places according to how old they are. The 2001 Key Statistics identified sixteen age groups as shown in table 2; of these, eleven, representing 85% of the population, are becoming more concentrated geographically. Old people are less likely to live in the same district as younger people; influxes of students increasingly drive other age groups out of certain cities; babies are being born more often in a more select group

Table 2. All people in Britain by age.

Britain: proportion of all people by age (years)	Distribution (%)			Polarisation (%)			SAS cells
	2001	1991	change	2001	1991	change	
0–4 [c]	5.90	6.68	–12	4	4	6	8T2
5–7 [d]	3.72	3.82	–2	3	4	–10	$15T2 \times a/(a+b)$
8–9 [e]	2.61	2.49	5	3	4	–7	$15T2 \times b/(a+b)$
10–14 [f]	6.56	6.00	9	3	4	–11	22T2
15 [g]	1.27	1.18	8	4	4	7	29T2
16–17 [h]	2.51	2.50	0	4	3	7	36T2
18–19 [i]	2.41	2.75	–12	8	3	169	43T2
20–24 [j]	6.02	7.79	–23	12	8	46	50T2
25–29 [k]	6.57	8.30	–21	9	7	27	57T2
30–44 [l]	22.58	21.18	7	3	3	20	$64T2+71T2+78T2$
45–59 [m]	18.96	16.47	15	5	4	24	$85T2+92T2+99T2$
60–64 [n]	4.91	5.01	–2	5	4	26	106T2
65–74 [o]	8.43	8.80	–4	6	6	10	$113T2+120T2$
75–84 [p]	5.61	5.46	3	7	7	0	$127T2+134T2$
85–89 [q]	1.29	1.14	13	9	10	–6	141T2
≥ 90 [r]	0.64	0.42	50	11	12	–9	148T2
				where $a = 19T38+22T38+25T38$			
				$b = 28T38+31T38$			
				Denominator			1T2

Source: 2001 Key Statistics table 2, denominator [b] (all people) and 1991 Census corrected for underenumeration (LCT). The statistics should be read as KS 2 column [letter], see GROS (2003), ONS (2003a), and Mitchell et al (2002).

Proportions are of the total population at each time and change is relative change. Note the letters after each variable refer to the variable column identified in the printed (pdf) Key Statistics Tables. They should be read as KS2 column [letter]. The denominator [2b] implies that the denominator variable used in this table for 2001 statistics is taken from column ‘b’ (2001 population, all people) of Key Statistics table 2 (age structure). Because all the numerator variables are taken from the same table, 2 (Age Structure), the table numbers are omitted from the variable descriptions in this table.

The 1991 Small Area Statistics cell numbers used are as listed in the final column. The data have been corrected for underenumeration in 1991 (Mitchell et al, 2002) and have been reagggregated from enumeration districts and output areas to the boundaries of local authorities in 2001. In the list above ‘8T2’ implies cell 8 from table 2 of the 1991 Small Area Statistics (residents aged 0–4 years). The 1991 denominator population is the sum of all ages. Note that table 38 has had to be used to estimate the populations aged 5–7 years and 8–9 years. These statistics have been adjusted to agree with the total for all residents aged 5–9 years, rather than just those living in households.

of areas than they were in 1991. The population aged 0–7 years is falling, mainly reflecting the falls in those aged 18 to 29 years. Fewer children are being born because there are fewer people to be young parents and because the average age of childbearing has risen. The numbers aged 8 to 17 years are rising, partly because some of these are the children of the rising numbers of 30 to 59 year olds (surprising numbers of older people now have very young children), whose parents in turn are living to unprecedented ages (the numbers aged 90 and over rose by 50% in the ten years). Note that we are comparing age groups and not cohorts.

The most geographically concentrated age group in 2001 was people aged 20–24 years, 12% of whom would have to move home if they were to spread themselves evenly across the country. The equivalent proportion ten years ago was 8%, a 46% rise. The largest relative rise is of 169% for people aged 18–19 years. The student ghettos are growing most rapidly. In both censuses students were recorded (or could be counted) at their term-time addresses. After these young folk, it is people aged 90+ years who are most separated geographically from the rest of society; but that separation is falling (as it is also for 85–89 year olds). The very old are becoming slightly less segregated as they increase in their relative size as a group. Perhaps most surprising are the slight reductions in geographical concentration seen in children aged 5 to 14 years. This is not seen in their parents' age range. Other analysis, not reported here (but supported by table 4 below), shows that these children are becoming in effect slightly more spread out over a greater number of households than in the past, more families are having just one child which might partly explain their more even spread. The slight fall in the polarisation of these children is, however, negligible compared with the growing polarisation of life in Britain by age in adulthood.

Table 6, which takes a thirty-year perspective, shows that some three million people would have to move local authority in 2001 for their age groups to be evenly distributed, or 5.19% of the population. In 1971 this statistic was 4.38%. It fell to 4.21% by 1981 and rose to 4.62% in 1991. The rise in polarisation by age in the 1990s has been 41% higher than the rise in the 1980s. An additional 442 000 people would now have to move as compared with a decade ago. Only a small minority of that rise can be accounted for by university students and graduates aged 18–24 years. The vast bulk of the rise in the polarisation of Britain by age in the 1990s is accounted for by polarisation in most other age groups. Table 6 shows that in the 1970s and the 1980s a majority of the age groups did not polarise but became more evenly mixed within the population as a whole. Something new and disturbing came to pass in the 1990s. Parents are now more likely to be living further away both from their adult children and from their parents if these ecological patterns translate to the individual level. Ecologically we are almost all more likely to be living further away geographically from the generations born before and after us. Communities, if local authorities can be thought of as such, are becoming less mixed.

Increased segregation of the married, White people, and migrants

The census labels people and through doing so gives them identities. Some labels are less contentious than others. Most (but not all) people tick a box labelled 'male' or 'female' with ease. Ethnic labelling is one of the most contentious forms and so different labels have been used in both 1991 and 2001 and in England and Wales as compared with Scotland. In table 3 (see over) we have endeavoured to construct all the labels of identity that are broadly comparable between the two censuses and three countries and then to show the degree to which different groups of all the population, so labelled, are changing in proportions and in geographical concentration. The table shows, for instance, that the proportions of the population who are male and female has hardly

altered at all and that men and women are slightly more likely to be living together (geographically) in the same districts than they were ten years ago. At both points in time only 1% would have had to move district to achieve geographic sexual equality.

The increased geographical harmony of the sexes is not reflected in their marital status. The proportion of people who are married has fallen by 8% and their degree of geographical polarisation has risen by 27%. Marriage has fallen in popularity most where it was least popular to begin with (places such as London). Despite this there has been hardly any rise in the polarisation of single adults and a slight fall in the polarisation of children. As we see below, it is quite possible, given three or more mutually exclusive and exhaustive groups of the population, for one to polarise geographically while the others do not. Many of the single are not living in single-person households of course, but their rise as a group has been quite evenly spread across the country whereas the decline in the popularity of marriage has been much more uneven.

The increase in polarisation for the married (and for the Whites) may appear to be a small increase on a small segregation base and so it could be claimed that the change is hardly substantively significant. However, the absolute numbers of people involved are enormous (as compared with past censuses, see below). Some 186 700 *additional* married people would have to move home in 2001 as compared with 1991 in all the right directions if this group were to be evenly spread across Britain. Some 631 400 *additional* White people would now have to do so as compared with 1991.

When people are labelled by their place of birth we see a picture which suggests decreasing polarisation overall. However, the Census Offices have chosen to no longer include 'New Commonwealth' in the Key Statistics and the one group of the population by birthplace which has polarised geographically are those born outside the European Union—but only very slightly. The largest relative rise of any birthplace group has been of those born in the EU outside of Britain and Ireland. The largest relative fall (and an absolute decline of over 100 000 people) has been of people born in the Republic of Ireland living in Britain and this is also the group which has become less segregated the most.

At the start of this paper we referred to the current debate concerning the accuracy of the 2001 Census (and other censuses). One aspect of that debate is that, if the 2001 Census is correct, and it almost certainly largely is, then a large number of young men either did not enter this country in the 1990s who were thought to have entered it, or left it, or—most probably—both. The identity of those more likely to have been probable emigrants is much easier to estimate than the identities of people thought to have entered who did not enter Britain. The Scottish born have decreased most as a proportion of the British public, to stand now at just over 9%, perhaps indicative of some of the groups from which younger men were most likely to leave Britain in the 1990s. The Scottish born are the most spatially segregated of all the identity groups shown in the table. Not surprising, perhaps, given that most are born in Scotland and that Scotland has a shorter and more sparsely populated border with England than does Wales.

The most intriguing results from comparing the changing geographies of peoples' changing identities in Britain is found when ethnicity is analysed. Note here, we are not of course actually comparing people who literally change their identities (although analysis of the Longitudinal Study in 2004 will allow that). Instead we are largely comparing the changes in identity that result from births, deaths, and migration as most people label themselves consistently between censuses. However, the census authorities are less consistent than are people. As the labels used to assign people have been changed the groups compared here are not strictly comparable, but ethnic groups never are strictly comparable over time as the meanings of ethnicity change so fast. By combining groups to produce the most comparable sets of labels it is evident

Table 3. All people in Britain by identity.

Britain: proportion of all people by identity	Distribution (%)			Polarisation (%)		
	2001	1991	change	2001	1991	change
<i>Sex</i>						
Males [1f]	48.61	48.85	0	1	1	-7
Females [1g]	51.39	51.14	0	1	1	-7
<i>Status</i>						
Married [4d+4e+4f]	42.60	46.23	-8	5	4	27
Single ≥16 years [4b+4g+4h]	37.33	33.61	11	6	6	1
Children (aged 0-15 years) [rest]	20.07	20.17	0	3	3	-3
<i>Birthplace</i>						
England [5c]	77.00	78.11	-1	13	13	0
Scotland [5d]	9.16	9.48	-3	76	76	-1
Wales [5e]	4.93	4.98	-1	73	75	-2
Northern Ireland [5f]	0.45	0.44	2	16	17	-8
Republic of Ireland [5g]	0.87	1.07	-19	30	35	-14
Other EU countries [5h]	1.34	0.90	48	26	26	-1
Elsewhere [5i]	6.27	4.91	28	39	38	4
<i>Ethnicity</i>						
White [6c+6d+6e or S6c+S6d+S6e+S6f]	91.90	94.36	-3	4	3	41
Black Caribbean [6f+6n or S6i]	1.41	0.94	50	56	64	-13
Black African [6g+6o or S6m]	0.99	0.40	145	63	67	-6
Black other [6i+6p or S6l]	0.44	0.34	32	44	50	-11
Indian [6j or S6g]	1.84	1.55	18	56	59	-4
Pakistani [6k or S6h]	1.31	0.89	46	60	61	-1
Bangladeshi [6l or S6i]	0.50	0.31	62	62	62	0
Chinese [6q or S6k]	0.43	0.29	45	32	32	-2
Other Asian [6h+6m or S6j]	0.43	0.37	18	50	50	0
Other other [6r or S6o+S6p]	0.75	0.54	38	35	39	-10
<i>Movers</i>						
Migrant [24c]	12.10	9.94	22	9	8	3
Immigrant [24e]	0.70	0.64	9	33	32	1

Source: 2001 Key Statistics tables 1, 4, 5, 6, and 24, denominator [1e] and 1991 Census corrected for underenumeration (LCT). Key Statistics preceded by 'S' are the Scottish labels. Note Austria, Finland, and Sweden joined the EU between the censuses, the ethnicity labels are only approximately comparable, and immigrants in 1991 were from outside Great Britain (from outside the United Kingdom in 2001). The statistics should be read as KS [table number] column [letter], see GROS (2003), ONS (2003a), and Mitchell et al (2002). Note that 'single' here is all nonmarried people aged 16 years or over.

Proportions are of the total population at each time and change is relative change. Note the numbers and letters after each variable refer to the variable column identified in the printed (pdf) Key Statistics tables. They should be read as KS [number] column [letter]. The denominator [1e] implies that the denominator variable used in this table for 2001 statistics is taken from column 'e' (2001 population, all people) of Key Statistics table 1 (usual resident population).

The 1991 Small Area Statistics cell numbers used are as listed in the final column. The data have been corrected for underenumeration in 1991 (Mitchell et al, 2002) and have been reagggregated from enumeration districts and output areas to the boundaries of local authorities in 2001. In the list below '2T2' implies cell 2 from table 2 of the 1991 Small Area Statistics (male residents). The denominator population in 1991 is the total resident population.

Table 3 (continued).

Britain: proportion of all people by age (years)	SAS cells
<i>Sex</i>	
Males [1f]	2T2
Females [1g]	5T2
<i>Status</i>	
Married [4d+4e+4f]	4T2+7T2
Single ≥ 16 years [4b+4g+4h]	1T2-4T2-7T2-8T2-15T2-22T2-29T2
Children (aged 0-15 years) [rest]	8T2+15T2+22T2+29T2
<i>Birthplace</i>	
England [5c]	5T7+6T7
Scotland [5d]	7T7+8T7
Wales [5e]	9T7+10T7
Northern Ireland [5f]	11T7+12T7
Republic of Ireland [5g]	13T7+14T7
Other EU countries [5h]	37T7+38T7
Elsewhere [5i]	15T7+16T7+17T7+18T7+39T7+40T7+41T7+42T7 +43T7+44T7
<i>Ethnicity</i>	
White [6c+6d+6e or S6c+S6d+S6e+S6f]	2T6
Black Caribbean [6f+6n or S6l]	3T6
Black African [6g+6o or S6m]	4T6
Black other [6i+6p or S6l]	5T6
Indian [6j or S6g]	6T6
Pakistani [6k or S6h]	7T6
Bangladeshi [6l or S6i]	8T6
Chinese [6q or S6k]	9T6
Other Asian [6h+6m or S6j]	10T6
Other other [6r or S6o+S6p]	11T6
<i>Movers</i>	
Migrant [24c]	1T15
Immigrant [24e]	7T15
Denominator: all people [1e]	1T2

that the populations of all groups other than 'White' have risen as a proportion of the total British-resident population. This should have been expected mainly because of higher birth rates in minorities that tended to contain more younger adults. What is unexpected is that the degree of spatial polarisation at this scale of all the ethnic minority groups has fallen or stayed the same (for 'Bangladeshis' and 'other Asians'). At exactly the same time there has been a very large (41%) increase in the spatial polarisation of people labelling themselves as 'White' in the census. Now 4% of White people would have to move district if they were to be spread evenly rather than 3% a decade ago. This is a rise of 631 400 people. It is perhaps time that British academics began to accept that a degree of White, ethnically and probably partially racially motivated, self-selecting migration is occurring in Britain (known colloquially as 'flight'). All other ethnic groups as identified by the censuses are mixing more geographically than in the past so there is little evidence of aggregate self-selecting segregation amongst these minority groups. The extent to which segregation is occurring at a ward-by-ward, street-by-street basis will require further analysis. All we can say here is that between local authorities the segregation between White and all others

is growing. All other ethnic groups have become more geographically mixed despite growing in number and so it is not higher birth rates of younger adults, immigration to similar places, or self-segregation of ethnic minorities that is leading to the White polarisation. As an aside it is important to note that there is no reason to expect a group that grows in numbers to become less polarised. For example, half the groups shown in table 1 become more polarised as they grow in size (or less as they shrink). The same is true of more than a third of those groups listed in tables 2 and 3.

It is possible, but unlikely, that people who labelled themselves as White in particular areas in 1991 felt happier to label themselves as some other category in areas with few White people in 2001.

The last two identity groups shown in the table are people labelled as migrants. The censuses label people as migrants if they said they lived at a different address a year ago so the periods 1990–91 and 2000–01 are being compared here. Under the dramatically different housing conditions of recent years (a housing boom in 2000–01 rather than the slump of 1990–91), 12.1% of people have been labelled as migrants, a rise in the rate of 22% over a decade. Of these fewer than 1% are migrants from outside the country (Great Britain in 1991 and United Kingdom in 2001 so the figures are not exactly comparable). Immigrants from outside Britain have not risen in proportion as much as migrations within Britain have. Neither group shows any significant increasing tendency to segregate.

Because of changes in the definition of the European Union over thirty years, the removal of the New Commonwealth category in 2001, no ethnicity question being asked in 1971 or 1981, and migration being recorded differently in 1971, our choice of which variables to compare over all censuses is somewhat curtailed. We could have compared men and women; but these are not the most interesting of labels. Instead, in table 6 the marital status of adults is compared across the four censuses. What table 6 shows is that married people are now more segregated than ever before whereas single adults and children taken as a whole are less segregated. As families have fewer children, those children have become more spread out across families (and local authorities). Simultaneously, single (that is, unmarried) adults have become more likely to have children over time and this group has changed from being relatively spatially isolated (in 1970s 'singles ghettos' if you like!) to being much more evenly spread across the country. However, both these latter two groups are smaller than the proportion of people who are married and the polarisation of married people has been growing at a greater rate than the equalisation of other such status groups. The net result, as shown in table 6, is that some 2.74 million people would now have to move local authority if married status were to be evenly spread across Britain, 4.69% of the population in 2001. In 1971 this proportion was 3.60%; it fell to 3.40% in 1981 and rose to 4.29% in 1991. If this story is beginning to sound a bit familiar that is because there is a pattern emerging here of society becoming more evenly distributed geographically in the 1970s, dividing in the 1980s, and continuing to divide through the 1990s. The rise in polarisation in the latest decade equates to 333 000 *additional* people having to take part in the fictitious forced migration we began our story with.

A nation of households dividing by wealth and ways of living

The censuses group people living at the same address and sharing housekeeping into households and these too can be labelled. In Britain 23.85 million such households were counted in 2001, a rise of 9% over the decade. Through the Key Statistics these households can be compared with their forebears in terms of their tenure (how they possess their home), the amenities their home possesses, the composition of the household—including whether it contains people with illness and the number of cars and

vans the household has access to. On many of these measures households in Britain are becoming more similar in different places despite the polarisation of individuals detailed above. However, in each group of measures, as shown in table 4 (see over), a key subgroup of households—almost always the poorest—are polarising (or being increasingly spatially marginalised). Moreover, as we argue further below, the types of household goods and privileges that the censuses measure include items such as cars and owner-occupied homes that were rare in the 1950s, that almost half the population owned by 1971, and which are commonplace and often a necessity now (in areas where you have to drive and where there are no longer any council houses).

A decade ago owner-occupation reached two thirds of households following years of rapid growth in this sector. Over the last ten years its share of households rose by only a couple of percentage points. That small rise masks a more significant shift within owner-occupation where the share of households who now own their homes outright has risen by 22% and the share and numbers who have a mortgage have fallen. Owner-occupiers now actually own far more of their properties; 28.9% of households own all their property (rather than part of it being mortgaged). Over the same period the proportion of households living in local-authority-owned council accommodation fell by 35% against rises in the housing association (and other registered social landlords) and private rented sectors as well as the 'other' sector which includes people living in caravans and (now) those who are staying rent free with a friend. The only tenure to have polarised geographically is council housing. Council house tenants were most likely to exercise their right to buy their homes in areas which had the fewest local authority homes to begin with. To be growing up in a council house now marks a household out geographically far more than it did a decade ago. Were the council home tenants of Britain to be evenly spread across the country's local authorities, almost a quarter would have to move home.

Amenities were measured by the last two censuses as having central heating in your home and by whether your household had the sole use of a bathroom (or whether they had to share with other households). Households could be grouped into four categories by these two measures. The largest group, now 91% of all households, has both amenities and has risen the most in numbers. The smallest group, those with access neither to central heating nor to their own bathroom, has shrunk in number the most to constitute only 0.15% of all households. Despite these improvements in amenities all three disadvantaged groups of households have become more spatially polarised and those who are worst off have polarised the most (spatial scale may matter but we have access to only one scale). Amenities have been added to flats and houses most often where there were most to begin with. Again, Britain is better off but less equal.

For the composition of households to be compared over time through the Key Statistics requires at least one assumption to be made and one important change in labelling to be borne in mind. The assumption is that households containing two or more pensioners have no children within them and that (two of) the pensioners are probably married. The label change to remember is that same-sex couples who ticked that they were cohabiting in 2001 are labelled as such (in 1991 we were less glad to be gay and their entries were 'corrected' by the census authorities to label them as single). Thus the rise in all three groups of cohabiting households shown in table 4 is partly an artefact of past prudishness.

Perhaps surprisingly a smaller proportion of households are now constituted as a single pensioner living alone (as the population ages, more of the very old are in care homes but the rises shown in private homes in table 1 do not account for all of this; more pensioners also get to spend more of their lives as pensioners together as the first to die of a couple tends to die later than in the past). Less surprisingly, the proportions

Table 4. All households in Britain by their census characteristics.

Britain: proportion of households by	Distribution (%)			Polarisation (%)			SAS cells
	2001	1991	change	2001	1991	change	
<i>Tenure</i>							
Owens outright [S18c]	28.90	23.66	22	9	12	-21	9T23
Mortgage or shared ownership [S18d+S18e]	39.38	42.38	-7	6	7	-14	13T23
Council [S18f]	14.01	21.42	-35	24	20	20	33T23+37T23
Housing association or registered social landlord [S18g]	5.92	3.13	89	25	28	-10	29T23
Private landlord [S18h+S18i]	8.63	7.08	22	17	19	-8	17T23+21T23
Other [S18j]	3.16	2.33	36	13	26	-51	remaining households (total less those above)
<i>Amenities</i>							
Both heating and bathroom [S19f]	91.34	80.39	14	2	4	-49	23T20
Without central heating or bathroom [S19g]	0.15	0.73	-79	38	27	38	67T20
No central heating but bathroom [S19h]	8.20	17.98	-54	24	19	27	34T20
Share bathroom, have heating [S19i]	0.31	0.45	-32	27	26	3	56T20
<i>Composition</i>							
Single pensioner [20c]	14.48	15.08	-4	5	5	-5	18T42
Single other [20d]	15.80	11.30	40	10	12	-14	18T42
Married no kids (plus pensioners) [20e+20f]	21.86	24.24	-10	9	6	48	67T87
Married with dependent children [20g]	17.48	22.34	-22	7	6	7	78T87
Married with only nondependents [20h]	6.04	8.55	-29	8	7	11	89T87
Cohabiting with no children [20i]	4.64	3.35	38	8	11	-26	111T87
Cohabiting with dependent children [20j]	3.19	1.75	83	8	10	-19	122T87
Cohabiting with only nondependents [20k]	0.32	0.22	48	8	15	-48	133T87
Lone parent with dependents [20l]	6.50	5.26	24	11	13	-14	155T87
Lone parent with no dependents [20m]	3.11	3.69	-16	8	7	2	166T87
All others [20n+20o+20p+20q]	6.57	4.23	55	18	15	17	177T87+34T87

Table 4. All households in Britain by their census characteristics.

Britain: proportion of households by	Distribution (%)			Polarisation (%)			SAS cells
	2001	1991	change	2001	1991	change	
<i>Composition (continued)</i>							
No adults work: with children [21c]	4.92	4.80	3	18	18	-4	1T36+7T36-8T36+13T36-14T36+25T36 -26T36+31T36-32T36+43T36-44T36
No adults in work: no dependents [21d]	31.42	30.82	2	6	6	1	8T36+14T36+26T36+32T36+44T36
With dependent children [21e]	29.38	30.02	-2	4	4	-2	1T46
With dependent children aged 0-4 years [21f]	11.27	12.76	-12	5	5	2	27T46+53T46+131T46+157T46
<i>Illness</i>							
With limiting long-term illness ^a [21g]	34.28	24.70	39	7	8	-11	1T44
<i>Cars</i>							
No car [17c]	27.47	33.35	-18	15	14	8	3T21
One car [17d]	43.75	43.51	1	3	4	-29	4T21
Two cars [17e]	23.08	19.15	21	13	15	-13	5T21
Three or more cars [17f+17g]	5.70	3.99	43	19	21	-9	6T21
All households [S18b]							1T23

Source: 2001 Key Statistics tables, 17, 18, 19, 20, and 21, denominator [18b] and 1991 Census corrected for underenumeration (LCT). The statistics should be read as KS [table number] column [letter], see GROS (2003), ONS (2003a), and Mitchell et al (2002).

Proportions are of the total population at each time and change is relative change. Note the numbers and letters after each variable refer to the variable column identified in the printed (pdf) Key Statistics tables. They should be read as KS [number] column [letter]. The denominator [18b] implies that the denominator variable used in this table for 2001 statistics is taken from column 'b' (All Households) of Key Statistics table 18 (tenure and landlord).

The 1991 Small Area Statistics cell numbers used are as listed on the final column. The data have been corrected for underenumeration in 1991 (Mitchell et al, 2002) and have been reaggregated from enumeration districts and output areas to the boundaries of local authorities in 2001. In the list above '9T23' implies cell 9 from table 23 of the 1991 Small Area Statistics (total households in owner occupied permanent buildings owned outright). *In all cases where there are different versions of tables for Scotland, and England and Wales it is the cell numbering for the more complete Scottish tables which is shown here for 1991.* The 1991 denominator population is the total number of households.

^a Households with one or more persons reporting limiting long-term illness.

of other single people, cohabiting couples, lone parents with dependent children, and 'other' households (often adults, such as students, sharing) have risen. The large falls have been in households constituted of married couples and of lone parents with only nondependent children. This latter group may in fact contain many elderly parents living with an adult child (and often being cared for by the child). The fall in numbers of this group, perhaps, reflects the general fall of people's willingness to care for elderly relatives in their homes. This group of households has polarised slightly as it has shrunk, 'other' households have polarised as student numbers have grown while, other than these groups, it is married couples which are the only other composition group to have become more geographically clustered.

Despite the rapid fall in unemployment over the decade almost 5% of households are now made up of adults without work but with dependent children. The proportion of households without such children where no adult works has also grown, as the population has aged, to over 31%. Households of any kind containing dependent children have fallen slightly in number and become ever so slightly more evenly spread while those with very young children have polarised slightly. There has been a rapid rise in the proportion of households which contain at least one person with a limiting long-term illness and, as the population has aged, this group has grown most where it was least well represented in the past. If a household contained a person with such an illness in 1991 then even if they become more ill, or more members of the household develop such illnesses, this measure would not reflect that.

Our final household measure is the number of cars and vans each household has access to (which usually means owns or are buying but includes company cars at all dates analysed). The proportion of households with three or more cars has increased the most, by 43% and that with two cars by 21%: there has been almost no change in the proportion of households with one car and a fall in the proportion with no car to 27.5%. Of these four groups of households only the last has become more geographically concentrated. Households have been most likely to buy a(nother) car in areas where many households had cars. Of course, households are more likely to need a car in such places; but again there are signs that another group of households in Britain are, almost literally, being left behind.

Two of the categorisations used in table 4 can be compared over the last four censuses if categories are combined: tenure and car access. Different types of amenities were recorded in different censuses, such as whether people had access to hot water in 1971, illness was not asked about prior to 1991, and household composition was measured very differently in the past. Table 6 (below) presents the statistics calculated from all these statistics for these two types of household classification. Here we have the only examples of an overall reduction in polarisation over the entire period, between every pair of censuses and both variables. In 1971, 16.34% of households by tenure and 10.32% of households by car access would had to move local authority to achieve equality. By 2001 these proportions had fallen to 9.67% and 9.26%, respectively. How can society be polarising spatially in some ways, but not, by household, in others? Note also that in table 6, when we combine the social rented tenure categories into one group (to allow 1971 data to be included) there is no polarisation of this group in the 1990s (but there was before then, as there was for private rented as the tenure shrunk). On the other hand, households with no car have been increasingly polarising since 1971.

We suspect the problem here is that although the census categories have (when amalgamated) remained the same the meaning of these goods has altered substantially over the decades. We are comparing (for cars) what was almost a luxury in 1971 with what has almost become a necessity in 2001. Any good of this kind, the best example being televisions, becomes less polarised in its distribution over time. Similarly tenure

is losing the meaning it held in 1971, although the rise in housing association and registered social landlord accommodation where there was relatively little social housing in 1991 is intriguing (and may be partly thanks to the rural programme of the Housing Corporation). We believe that, had the census asked of those who owned cars or houses their worth, in each census since 1971, a picture of polarisation would have emerged.

A nation divided and dividing by work

Table 5 (over) is the second table that concentrates on a subgroup of the population rather than the population as a whole—people of working age which at the time of both of the last censuses was defined as being 16 to either 59 years (for women) or 64 years (for men). Occasionally slightly different age groups had to be used for comparison and this is highlighted in the footnotes to the table. The table compares people by their rate of illness, employment status, by how many hours they work if they work, considers unemployment in particular age groups, the industry and occupations of those in employment, and then the only form of qualification that can be compared between 1991 and 2001, whether people have a university degree or its equivalent.

Illness rates are included for people of working age but as illness is so closely related to age should be treated with caution (as this group are now, on average, older than they were in 1991). By employment status most groups appear to be coming slightly less polarised but two groups have risen greatly in number. Students and those retired early have polarised geographically, as have people who are unemployed and have never worked (a category left in as a residual in the 1991 statistics, as myth would have it, by a civil servant who thought this group should not be made invisible in 1991!) Similarly youth unemployment has become more polarised despite falling from 14.18% to 5.89%. The ‘New Deal’ worked best where it needed to work least.

Industry: mining and quarrying, which has almost disappeared, has polarised greatly and construction has polarised slightly, but there is little other evidence of a growing spatial divide in industries in the 1990s with particular forms of industry becoming more concentrated in particular areas (the fabled growth poles). Occupations show a similar pattern. Almost all types of occupation are becoming a little more evenly spread across the country other than professional occupations which polarised slightly as they grew rapidly, and skilled trades and machine operatives recorded the same polarisation as their numbers shrank. The proportion of people with a degree has risen by 32% and their geographical locations have continued to polarise despite the apparent widening access to universities.

It is difficult to summarise the changing geographical world of work that these statistics describe. For an overall summary the simplest thing is to take the three categories into which adults of working age can be grouped for the purposes of comparing all four censuses as shown in table 6. These are ‘in work’, ‘unemployed’ and ‘other’ (looking after the home, students, early retired, permanently sick, etc). When this categorisation is carried out, the lives of adults of working age in Britain appear to be polarising just as their ages and marital statuses did over time. Unlike age and marital status, people by work also appeared to have polarised in the 1970s. However, given that when using census dates we end the 1970s in 1981 and unemployment rose from 1 million in 1979 to over 3 million in 1981 it is perhaps a little unfair to label the 1970s, as a whole, a period of geographical social polarisation by employment.

Table 6 shows that some two million adults would have to move home across local authority boundaries were all areas to have the same simple three-fold employment profiles of working-age adults. This equates to 5.61% of the working-age population, having risen from 3.40% in 1971 to 3.82% in 1981 and 5.14% in 1991. The 1990s rise in

Table 5. All adults (aged 16 to 59/64/74 years) in Britain by their census characteristics.

Britain: proportion of households aged 16–59/64 by	Distribution (%)			Polarisation (%)			SAS cells
	2001	1991	change	2001	1991	change	
<i>Illness</i>							
With limiting long-term illness [8d]	13.73	8.57	60	10	12	–14	7T12+10T12+13T12+17T12+7T13 +10T13+13T13+17T13
<i>Employment status</i>							
Employees: part-time [9c]	11.72	10.65	10	6	6	–1	34T8+188T8
Employees: full-time [9d]	40.52	41.69	–3	4	4	3	23T8+177T8
Self-employed [9e]	8.13	7.70	6	13	14	–4	45T8+56T8+199T8+210T8
Unemployed [9f]	3.41	7.28	–53	14	15	–2	78T8+67T8+232T8+221T8
Student [9g]	7.27	4.95	47	17	9	84	89T8+111T8+243T8+265T8
Retired [9h]	13.64	10.84	26	7	6	15	133T8+287T8–127T2–134T2–141T2 –148T2
Permanently sick or disabled [9k]	5.69	4.44	28	17	17	–1	122T8+276T8
Economically inactive: other [9i+9j+9l]	9.61	13.12	–27	7	5	24	144T8+298T8
Unemployed: never worked [9o]	0.31	1.83	–83	29	26	12	1T91+2T91+10T91–11T91–19T91–20T91 –28T91–29T91–37T91–38T91–46T91 –47T91–55T91–56T91–64T91–65T91 –73T91–74T91–82T91–83T91
<i>Of those in employment aged 16–74</i>							
Hours worked ≤15 [10c+10d]	8.20	7.59	8	6	7	–16	2T75
Hours worked 16–30 [10e]	16.45	12.40	33	5	4	16	3T75+4T75+5T75
Hours worked ≥31 [10f+10g+10h]	75.35	76.65	–2	1	1	22	6T75+7T75
Unemployed, aged 16–24 [9m]	5.89	14.18	–58	14	13	10	68T8+69T8+79T8+80T8+222TB+223TB +233T8+234T8
Unemployed, aged 50 and over [9n] (note these are age 55+ in 1991)	1.76	2.86	–38	12	14	–12	74T8+75T8+76T8+85T8+86T8+87T8 +228T8+229T8+230T8+239T8 +240T8+241T8
<i>Industry</i>							
Agriculture forestry and fishing [11c+11d]	1.61	1.91	–16	40	48	–17	2T77
Energy and water [11g]	0.75	1.89	–60	19	25	–25	3T77
Mining and quarrying [11e]	0.34	2.76	–88	44	29	55	4T77
Manufacturing [11f]	14.81	17.78	–17	15	14	2	5T77+6T77
Construction [11h]	6.83	7.41	–8	8	7	13	7T77

Table 5 (continued).

Britain: proportion of households 16–59/64 by	Distribution (%)			Polarisation (%)			SAS cells
	2001	1991	change	2001	1991	change	
<i>Industry (continued)</i>							
Distribution and catering [11i+11j]	21.46	20.48	5	4	4	4	8T77
Transport [11k]	6.98	6.37	10	9	12	–22	9T27
Banking and finance [11l+11m]	17.54	12.04	46	14	17	–15	10T77
Other services [11n+11o+11p+11q]	29.69	29.16	2	5	7	–20	11T77+12T77
<i>Occupation</i>							
Managers and senior officials [12c]	14.85	15.82	–6	9	10	–7	9T278
Professional occupations [12d]	11.14	8.63	29	11	10	7	17T78
Associate professional and technical [12e]	13.80	8.74	58	7	8	–21	25T78
Administrative and secretarial [12f]	13.28	16.01	–17	6	7	–21	33T78
Skilled trades [12g]	11.69	14.58	–20	9	8	9	41T78
Personal service [12h]	6.93	9.11	–24	6	7	–21	49T78
Sales and customer service [12i]	7.76	7.11	9	7	5	34	57T78
Process: plant and machine operatives [12j]	8.61	10.31	–16	15	14	6	65T78
Elementary occupations [12k]	11.94	8.57	39	8	10	–13	73T78
<i>Qualifications</i>							
People with a degree [13g]	31.52	23.91	32	13	12	8	4T84
<i>Various denominators</i>							
People aged 16–59/64 (approximately)							36T2+43T2+50T2+57T2+64T2+71T2 +78T2+85T2+92T2+99T2+107T2
People aged 16–74							1T2–127T2–134T2–141T2–148T2 –8T2–15T2–22T2–29T2
People working							1T75
People aged 16–24							36T2+43T2+50T2
People aged 50–74							99T2+106T2+113T2+120T2
Source (see over).							

Table 5 (continued).

2001 Key Statistics tables 8, 9, 10, 11, 12, and 13 (denominators vary) and 1991 Census corrected for underenumeration (LCT). Note: hours worked are for those aged 16 to 74 in work as are industry and occupation. The statistics should be read as KS [table number] column [letter], see GROS (2003), ONS (2003a), and Mitchell et al (2002).

Proportions are of the total population at each time and change is relative change. Note the numbers and letters after each variable refer to the variable column identified in the printed (pdf) Key Statistics tables. They should be read as KS [number] column [letter]. The denominators are as listed below. For industry and occupation categories very crude equivalents have had to be identified in many cases but these are made explicit in the list below.

The 1991 Small Area Statistics cell numbers used are also as listed in the final column. The data have been corrected for underenumeration in 1991 (Mitchell et al, 2002) and have been reaggregated from enumeration districts and output areas to the boundaries of local authorities in 2001. In the list above '34T8' implies cell 34 from table 8 of the 1991 Small Area Statistics (males aged 16+ working part-time). The denominator populations in 1991 vary also and are listed at the end below. To make comparisons with 2001 it is necessary to calculate the numbers of people economically active from the 1991 10% census sample (1T91+2T91) and the number aged 16–74 in employment from that sample (1T77).

polarisation equates to some 245 000 *additional* people having to move home to achieve geographical equality or, perhaps less fancifully, that same number having to move home to return Britain to the unprecedented degree of polarisation by work it experienced in 1991.

Take another look at table 5 and its sixth column. Those working more than thirty hours a week are moving away from the rest of the population, as are those in professional occupations and those with a degree. In particular, they are moving away from those who are currently students, from people who are neither working nor unemployed but are of working age (many of these will be bringing up children), from the never employed and the young unemployed, from people who work in sales and customer service and do other more menial tasks. This table, although concerning employment, is about peoples' residential addresses. People who can choose are choosing to live further and further away from people who cannot choose.

Conclusions

Table 6 (over) has been referred to at many points in the text above. The top part of the table shows a subset of the statistics shown in table 1–5 above. The subset has been chosen given which census statistics can be calculated from the 1971 and 1981 Small Area Statistics and in many cases (other than age) categories have had to have been amalgamated. The columns in the table do not show change because of lack of space. Instead the bottom section of table 6 shows the results of a calculation of the total number of people who would have to move under each of the five categorisations in the top half of the table, both as a proportion and then in numbers. Note that the figures for cars and tenure refer to households, those for age and status to the population, and those for work to the working-age population (which began at age 15 years in 1971).

It is from the bottom section of table 6 that the figures on absolute number of people who would have to move have been drawn. By the categories of age, status, and work combined some 7.8 million people would have to move in the fictitious forced migration described at the outset; just over a million more than in 1991. Of course there may be some element of double counting here. Move the right person, of the right age and marital status and employment status in the right direction and you could strike out the equivalent of three anomalies in one. However, by just using three

categorisations of the population, two which only have three categories, there is also a huge degree of oversimplification in the 7.8 million figure. These moves would do nothing to make Britain less racially segregated and only a little to make it less segregated by the characteristic even the 2001 Census did not dare measure: income. The figure of 7.8 million is simply a number that can be compared with the past. By this measure polarisation overall rose by just 74 000 people in the 1970s (and almost certainly fell until 1979), it rose by 1.4 million in the 1980s and by a further million in the 1990s. The increase in polarisation may have been fastest year on year in the 1980s, but it was increased further and consolidated deeper in the 1990s.

So as we bring this preliminary story of the censuses to a close it does turn out that, in the end, Margaret Thatcher retains her status as being the prime minister who presided over a country pulling itself apart faster than before or after. What matters most now is that it kept pulling itself apart almost as quickly in the decade that followed her and what matters most, given that, is ‘why?’ The answer to why Britain continued to polarise socially geographically in the 1990s will take many years more than the weeks it has taken to determine that it did. One clue perhaps might lie in those two household categorisations which did not polarise—cars and tenure. The rapid growth in—and equally rapid geographical spread of—car ownership and the growth and spread of owner-occupation both increase mobility. That mobility enables more people to choose where they live and go to work in a more spatially diverse and distant set of workplaces.

As table 6 shows, in 1971, 49% of households did not have a car and 48% of households rented. They relied on public transport to get them to and from work and on private and social landlords to decide where they could live. The respective proportions in 2001 are 28% and 28%. It is a little uncanny that they were almost identical to begin with and are identical thirty years on. It is almost as if these situations were planned which, of course, they were. The privatisation of transport and housing, one of Europe’s largest road-building schemes in the 1980s, the extension of credit to make more car (and home) purchase possible and then the withdrawal of public transport subsidies to make it necessary, and the introduction and extension of the right to buy and other policies to encourage homeownership were not mere accidents. In 1971 roughly half the population had little choice over where they lived; by 2001 that had fallen to a quarter and the rest of the population were moving rapidly away from that quarter.

Choice over where to live is, however, an illusion. The three quarters of the population with access to mortgage finance and a car cannot live wherever they wish. Only the very richest household can do that and even that household, for reasons of security and because almost everyone else looks poor to them are confined to living in a small number of palaces. However, with limited housebuilding, households can choose to live slightly further apart than they used to. They can also both sort themselves more neatly and, more often be sorted by others in space—by banks and building societies who finance their homes, by employees who determine their salaries, and so on. That latter social sorting has been accelerating since the early 1980s as income inequalities have grown and wealth inequalities continue to grow.

In retrospect we should not have been surprised by what the 2001 Census showed; but if we did not have the census we could never have the hindsight. We began this paper by asking what happens next if this trend is not reversed? To see one version of that future you can look to the land of cars and social division—the United States—and in particular California where new extremes of segregation are being attained (Davis, 1999). But here we should end with a cautionary note. Although the polarisation that the 2001 Census reveals is extraordinary by British standards, British standards of

Table 6. People, households, and adults in Britain by their 1971, 1981, 1991, and 2001 Census characteristics.

Category	Distribution (%)				Polarisation (%)				Comparable cells	
	2001	1991	1981	1971	2001	1991	1981	1971	1981	1971
<i>Age</i>										
0–4	5.92	6.68	6.01	8.05	4.19	4.19	4.40	4.84	461	212P+215P
5–7	3.72	3.82	3.71	5.08	3.39	3.83	4.43	4.25	(2026+2029+2032)* 472/(2026+2029+2032 +2035+2038+71+78)	173P+174P+175P+195P+196P+197P
8–9	2.60	2.49	2.87	3.27	3.43	3.63	4.55	4.24	(2035+2038)*472/(2026+2029 +2032+2035+2038+71+78)	176P+177P+198P+199P
10–14	6.54	6.00	7.95	7.53	3.39	3.67	3.72	4.06	71*472/(2026+2029+2032 +2035+2038+71+78)	214P+217P
15	1.27	1.18	1.67	1.42	3.96	3.59	3.13	4.70	78*472/(2026+2029+2032 +2035+2038+71+78)	183P+184P
16–17	2.50	2.50	3.43	2.75	3.58	3.29	2.97	4.14	1910+1911+1912+1913	184P+185P+206P+207P
18–19	2.41	2.75	3.21	2.85	7.71	2.96	3.56	3.58	1914+1915+1916+1917	186P+197P+208P+209P
20–24	6.08	7.79	7.55	7.61	11.39	8.29	5.88	5.00	92	361P+375P+389P+403P+271P+285P+299P +313P
25–29	6.65	8.30	6.73	6.48	8.37	7.19	4.61	5.05	(494+505)*(106+113+120)/ (99+106+113+120)	362P+376P+390P+404P+272P+286P+300P +314P
30–44	22.57	21.18	19.49	17.58	3.09	2.61	3.44	3.02	(494+505)* 99/(99+106+113+120)	363P+364P+365P+377P+378P+379P+391P +392P+393P+405P+406P+407P+273P +274P+275P+287P+288P+289P+301P +302P+303P+315P+316P+317P
45–59	18.89	16.47	17.07	18.37	4.70	3.69	2.15	2.50	516+527	366P+367P+368P+380P+381P+382P+394P +395P+396P+408P+409P+410P+276P +277P+278P+290P+291P+292P+304P +305P+306P+318P+319P+320P
60–64	4.91	5.01	5.21	5.80	5.41	4.36	4.16	5.25	538	369P+383P+397P+411P+279P+293P+307P +321P
65–74	8.42	8.80	9.29	8.52	6.12	5.66	6.22	7.07	549+560	370P+371P+384P+385P+398P+399P+412P +413P+280P+281P+294P+295P+308P +309P+322P+323P
≥75	7.53	7.02	5.80	4.69	7.57	7.91	8.62	9.38	571	372P+386P+400P+414P+282P+296P +310P+324P

Table 6 (continued).

Category	Distribution (%)				Polarisation (%)				Comparable cells	
	2001	1991	1981	1971	2001	1991	1981	1971	1981	1971
<i>Tenure</i>										
Institution	3.77	3.17	3.20	3.66	20.99	16.34	21.16	23.05	219+220	86P+87P
Owner-occupied	65.61	63.94	53.23	44.92	5.86	6.96	10.47	12.98	967	53H
Social rented	19.25	23.77	31.71	28.26	17.17	19.31	17.92	18.13	983+999	54H
Private rented	8.36	6.86	10.31	19.65	15.98	18.30	16.82	14.81	1015+1031+1047+1063	55H+56H
Other (definition varies greatly over time)	3.01	2.26	1.55	3.51	12.96	26.05	35.99	46.39	1127+2617	57H+58H
<i>Status</i>										
Married (includes a few people married aged 15 years in 1971)	42.59	46.23	49.57	50.74	4.77	3.85	2.36	2.14	53+56	416P+418P+326P+328P
Single ≥ 16 years	37.36	33.61	28.13	25.29	5.45	5.53	5.54	5.72	52+55-59-62-66-69-73-76-80-83	415P+417P+325P+327P-359P-387P-269P-297P
Child (0-15 years, not married)	20.05	20.17	22.30	23.97	3.12	3.24	3.65	4.07	59+62+66+69+73+76+80+83	359P+387P+269P+297P
<i>Cars</i>										
No cars	27.66	33.35	39.47	49.05	14.70	14.29	12.50	10.42	1171	77H
One car	43.73	43.51	45.07	42.24	2.53	3.62	5.37	8.23	1172	34H
Two or more cars	28.61	23.13	15.46	8.71	14.27	16.03	17.61	19.89	1173+1174	35H
<i>Work</i>										
Working	71.09	71.20	70.35	73.77	3.87	3.52	2.41	2.11	394	260P+263P+266P
Unemployed	4.13	8.63	6.89	3.14	12.28	14.62	15.65	13.78	401	261P+264P+267P
Other (main economic activity for people of working age)	24.78	20.17	22.76	23.09	9.48	6.80	4.61	6.09	450-461-472-541-544-549-560-571-394-401	32P-359P-387P-269P-297P-397P-411P-307P-321P-370P-371P-372P-384P-385P-386P-398P-399P-400P-412P-413P-414P-280P-281P-282P-294P-295P-296P-308P-309P-310P-322P-323P-324P-260P-263P-266P-261P-264P-267P

Table 6 (continued).

Category	Total polarisation (%)				Total polarisation (numbers)			
	2001	1991	1981	1971	2001	1991	1981	1971
<i>Summary</i>								
Age	5.19	4.62	4.21	4.38	3 038 423	2 595 937	2 285 736	2 363 734
Tenure	9.67	11.40	14.22	16.34	2 451 406	2 577 910	2 898 648	3 195 486
Status	4.69	4.29	3.54	3.51	2 744 710	2 411 411	1 895 794	1 891 792
Cars	9.26	10.05	10.08	10.32	2 259 920	2 200 770	1 964 403	1 877 337
Work	5.61	5.14	3.82	3.40	2 019 010	1 774 133	1 242 751	1 094 595
<i>Total</i>								
Age+status+work	13.34	12.07	9.99	9.90	7 802 143	6 781 481	5 424 281	5 350 122

Source: tables 1–5 and the 1971, 1981, and 1991 Censuses. Note the 1971 Census top age category is 75+ years; people living in institutions have been treated as single household with that tenure (households sharing a dwelling as other tenure then, as are households sharing a non-self-contained household space in 1981). Married 15 year-olds were not included as children in 1971, the tenure and car final rows are for households, see GROS (2003), ONS (2003a), and Mitchell et al (2002). Proportions are of the total population appropriate at each time.

The 2001 Key Table column numbers and 1991 Small Area Statistics cell numbers used are as listed in the final columns to tables 1–5. The 1991 data have been corrected for underenumeration in 1991 (Mitchell et al, 2002) and have been reagggregated from enumeration districts and output areas to the boundaries of local authorities in 2001. In the list in the final columns the most comparable cells which were used here from the 1981 and 1971 Censuses are given. For 1981 ‘461’ implies cell 461 (total persons aged 0–4 years present), for 1971 ‘212P’ implies cell 212 from the 100 Population Table of the 1971 Small Area Statistics (males aged 0–4 years). Suffix ‘H’ in 1981 implies the cell is from the 100 Household tables. Note that to maximise comparability ratios have been used to estimate certain variables.

social polarisation may well still be low in international terms and the polarisation does little to alter the geographical hierarchy of places ordered from rich to poor which still requires examination. What we have reported here simply widens the social gaps between different people living in different places. Fundamentally the human geography of Britain may be little altered, just made yet more stark.

Acknowledgements. We are grateful to Helen Durham and Bethan Thomas for their help in preparing the 2001 dataset; to Richard Mitchell and Ludi Simpson for their help and comments on preparing the (corrected) 1991 dataset; to David Atkins and Martin Charlton for their help in preparing the 1981 dataset; to Stan Openshaw for helping to make the 1971 dataset available; and to Ron Johnston and two anonymous referees for commenting on a preliminary draft of this paper.

References

- Champion A G, Green A E, Owen D W, Ellin D J, Coombes M G, 1987 *Changing Places: Britain's Demographic, Economic and Social Complexion* (Edward Arnold, London)
- Davis M, 1999 *Ecology of fear: Los Angeles and the Imagination of Disaster* (Picador, London)
- Dorling D, 1995a, "Visualizing changing social structure from a census" *Environment and Planning A* **27** 353–378
- Dorling D, 1995b *A New Social Atlas of Britain* (John Wiley, Chichester, Sussex)
- Dorling D, Simpson S, 1994, "Gone and forgotten? The census's missing one-and-a-half million" *Environment and Planning A* **26** 1172–1173
- Dorling D, Simpson L, 2001, "The geography of poverty: a political map of poverty under New Labour" *New Economy* **8**(2) 87–91
- Dorling D, Martin D, Mitchell R, 2003, "Linking censuses through time", project website, <http://www.mimas.ac.uk/lct/> (accessed 25 March 2003)
- GROS, 2003, "2001 Census results", General Register Office Scotland <http://www.gro-scotland.gov.uk/grosweb/grosweb.nsf/pages/censushm> (accessed 25 March 2003)
- Johnston R J, Pattie C J, Allsopp J G, 1988 *A Nation Dividing? The Electoral Map of Great Britain, 1979–1987* (Longman, Harlow, Essex)
- Johnston R, Poulsen M, Forrest J, 2003, "Ethnic residential concentration and a 'new spatial order?': exploratory analysis of four United States metropolitan areas, 1980–2000" *International Journal of Population Geography* **9** 39–56
- Martin D, Dorling D, Mitchell R, 2002, "Linking censuses through time: problems and solutions" *Area* **34** 82–91
- Mitchell R, Dorling D, Martin D, Simpson L, 2002, "Bringing the missing million home: correcting the 1991 small area statistics for undercount" *Environment and Planning A* **34** 1021–1035
- Mohan J, 1999 *A United Kingdom? Economic, Social and Political Geographies* (Arnold, London)
- ONS, 2003a, "Key statistics for local authorities", *Excel spreadsheets*, Office for National Statistics, <http://www.statistics.gov.uk/census2001/default.asp> (accessed 25 March 2003)
- ONS, 2003b, "The output prospectus", Office for National Statistics <http://www.statistics.gov.uk/census2001/op.asp> (accessed 25 March 2003)
- Shaw M, Dorling D, Gordon D, Davey Smith G, 2000 *The Widening Gap: Health Inequalities and Policy in Britain* (Policy Press, Bristol)

