The Population of the UK

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Exercises

Chapter 1
Maps...*a different view of the United Kingdom*

An exercise for 6 to 600 players

You do not need a computer, or even a piece of paper and pen, to draw a map. Human bodies themselves will suffice. Here is a recipe for drawing a map of the geographical origins of a room of students. 'Cooking time' is about 10 minutes, although allow slightly longer when undertaking this exercise with over 100 students.

1. Each student needs to decide where they 'come from' (were born), i.e. their home city and suburb. If a student comes from outside the UK, that is fine – they will simply be appended to one of the edges of the map we are about to draw.

2. Determine the four corners of your map. Who comes from the furthest North East, North West, South East and South West? These four students need to move to stand at the top right, top left, bottom right and bottom left of the classroom/lecture theatre respectively.

3. Now all the other students must begin to sort themselves out in the map of where they come from. Begin by sorting yourselves out from North to South. The further North you come from, the further back in the room you need to be. Ask your neighbours directly in front of and behind you where they are from to work out if you are in the wrong place.

4. Now sort yourselves out from East to West. The further East you are from, the further right you should be along the row you are in. Again, by asking your neighbours (either side of you) where they are from, you should be able to work out if you are in the wrong place. Here left and right are as viewed by an observer looking at you from the front of the room.

5. Now check with all four of your nearest neighbours (those to your left and right and those in front of and behind you) to find out if they come from further East of you, further West, further South and further North of you respectively. If they don't, you need to move around a little more.

6. Finally, all shuffle in towards the centre of the room to end up with just an arm's length between you and your four nearest neighbours. Once you have done this you will have created a map of the country in which the area in the room is arranged in proportion to the population of students in your class by their areas of origin.

Having created your own map of the country, what you next use it for is up to you. If you are undertaking this exercise in an 'old university', your map is likely to include most of the country as people tend to travel further away from their areas of origin. However, what are the geographical biases in your distribution? Where does the person in the centre of your map come from? Further South or North than most people in the country?

For reference, the central constituency shown in the book in Figure 1.2 is the Peak District in Derbyshire (area 50). If you are undertaking this exercise in a school, then your map is likely to be of a only very small part of the country – but it is still a map drawn in proportion to you. Does the person in the centre of your map live closest to your school? If not, why not? Next you could begin to look for geographical differences among yourselves. If at university, then sit down if you took a 'gap year' before starting your studies. If at school, sit down if you intend to go to university

(or take a gap year). Did more students to the South or North of your particular map of Britain sit down?

You could divide the class into groups depending on where they originate from and then poll those groups to see if there are differences in their attitudes, say, to voting. These polls can be done anonymously on scraps of paper. The point is that even within one room there are likely to be geographical patterns. These are patterns which cannot simply be explained by the social, economic or political backgrounds, statuses and beliefs of those being counted.

[*Note: This game can easily be played for other countries and regions in the world if students have some link to those. If playing this game in the Southern Hemisphere, it is customary to place South towards the back of the room rather than north. An advanced version of the game, designed to simulate the panic that can ensue following epidemic disease outbreak, involves all students forming the original map as described above, but then trying to move to be as far away from their four geographical neighbours as possible while still remaining in the room. This version is best not played with students under age 18 or classes of more than 60 given the consequences.*]

Chapter 2
Birth*...and the suburban pied piper*

An exercise for 20 to 100 players

Form yourselves into the map of Britain or your local area according to your place of birth as described at the end of Chapter 1. Now, put up your hands if you moved home in your first year of life. Quite a few of you should have done this. Parents often find the home they are in unsuitable for a small baby, or need to move home urgently to get more space. Now raise your hands if you moved in your second year of life, third year, fourth year, fifth year, and so on. Is there any pattern to when your parents moved home? Did those living closest to city centres or who were first-born children move earlier. What about the direction of travel. How many moved towards the centres of towns and how many into the suburbs? Next, everyone with their hands up needs to move around the room, each in a precise direction so that the map is reformed by where you had moved to in your first few years.

By now you should all be located according to where you first went to school by age 5. Carry on the exercise, raising your hands if you moved, or moved again, at ages 6, 7, 8, 9, 10 or 11. There might be a sudden increase in the later two years. It depends partly on what kind of education system was in place where you lived at this time, but in many areas where you go to secondary school depends on where you lived at age 10. Obviously having older brothers and/or sisters complicates that picture, as do parents separating. A more sophisticated form of this exercise would have you playing the part of your oldest sibling. Age 10 is a peak year for migration in Britain. Reform the map to reflect your distribution by age 11.

Carry on to 12, 13, 14, 15, 16, 17. Do you notice any unusual changes in direction here? These are often the ages at which families are most settled geographically, but you might notice quite a few people moving home between age 15 (GCSE year) and the start of AS and A level studies. Finally, if you are in an old university, note the high migration rates of almost all of you at age 18 or 19. For those who doubt the importance of education on migration (and migration on education) ask yourselves why Britain runs a system, unlike almost any other in the world, in which between a third and a half of its 18 year olds are expected to not only leave home, but often to leave the village, town or city they grew up in and be scattered across the country in a way which appears random, but which you will know (if you have applied to university) is incredibly closely controlled by A level grades and quotas. The quotas might well be about to go, but exam grades might matter more than ever before as a result of other changes in student funding coming in from October 2012. If you are reading this book in Scotland or Ireland, your experience may be more like that found elsewhere in the world and you are unlikely to have moved as far from home. The same will be true if you are attending a 'new' (i.e. post-1992) university.

Finally, go forward in time and predict where you will be at ages 20, 21, 22, 23, 24, 30, 40, 50, 60 and 70. Will you be part of the majority who fit the stereotypes being described here or do you think you may be a little different? (Most people think they will be different. Most of course, are not.)

Chapter 3
Education...*the sorting out of children*

An exercise for 20 to 100 players

Form yourselves into groups, each group containing just a few (three to six) students. You could use the map you made at the ends of Chapters 1 and 2 to form the groups so that they are made up of students who come from near one another. Each group needs to imagine that all their members are aged 30, have children of their own about to enter the education system and have somehow come to political power. You are the slightly more grownup children we have just been describing; the ones who were in school in the 1990s, who were young adults in the 2000s, who are mostly parents now.

As a group, you have ten minutes to complete the following task: 'Design an education system where the aim is to teach children rather than sort them. What role would exams take in such a system, if any? At what ages would you examine each child's ability, on what subjects/issues, and what proportions would you decide to fail at any stage? How would you decide who goes to university and which university they go to? How would you then grade university students?'

After ten minutes stop and present your arguments to a neighbouring group. They, in turn, should present their suggestions to your group. Vote on the result and carry your combined most popular opinions forward to repeat the process after a further five-minute discussion (as a combined larger group of students). Then combine groups again and again until one set of ideas has won out. What led the most popular system to win through? Was it a good system, or simply well presented? Did you design it assuming your children were 'able'? Most parents think their children are above average!

Finally, take your initial groups and, at random, assign each group a (so-called) ability level. This is the level your prospective children could be expected to achieve under the current education system. One-third of all groups are now made up of the prospective parents of children who would attend university under the present system, one-third will not gain the qualifications to attend university but will be awarded five GCSE A–C grades, and the final third are the prospective parents of children who will not achieve this under the current system. Now, with your imaginary children in mind (and their interests at heart), each group needs to decide which of the systems initially presented it now thinks is best. Each group gets an equal vote. Vote on each system. Which system now wins?

Chapter 4
Identity...*labelling people and places*

An exercise preferably for 84 players, but can be played with 336, 252, 168, 42, 21 or 10 and numbers in between with some careful organisation.

Before you begin, assign each player to one of the 84 areas of Britain. If you have more than 84 players, work in groups. If you have less, each player is responsible for more than one area or, more easily, you could only use part of Britain. The instructions here are written assuming that you have exactly 84 players but it is not difficult to adapt them. Northern Ireland is excluded here because it has no clear neighbour in the rest of the UK.

1 Each player needs to construct the hypothetical atypical individual living in their area using the information contained in Figures 4.1–4.10. If that place were a person, who would that person be? Note: this person is not typical of the area and may not even exist. Instead, they are typical about what is atypical of their area, what identities are more clustered there than in other places. For example, here is the atypical occupant of London Central:

4.1.   Female
4.2.   Aged 25–29
4.3.   Black African
4.4.   Muslim
4.5.   Single
4.6.   Living alone
4.7.   Many neighbours left the area since last year
4.8.   Born outside the European Union
4.9.   Has a university degree or equivalent
4.10. Professional occupation

2 Once the players have identified their identities they need to move around the room or lecture theatre so that their 84 bodies are arranged as the map of Britain has been arranged in the Figures 4.1–4.10. They should have several neighbours. Identify each neighbour corresponding to the area immediately around you. Again you have formed a map of Britain.

3 Next compare your identities to those of your neighbours. On how many of the ten do you differ? For instance, to the East of the person who is London Central is London East and they differ on seven identities marked* below:

4.1.   Female
4.2.   Aged 0–4*
4.3.   Indian*
4.4.   Muslim (parents)
4.5.   Married (parents)*
4.6.   Married with kid(s) (that's you)*
4.7.   People tend not to move home in the area*
4.8.   Born outside the EU
4.9.   Parents have no qualifications*
4.10. Intermediate occupation*

4 Now move slightly away from the neighbour(s) you share least in common with and slightly towards those who are most similar to you. Someone looking down on the room from above should see a geographical map of social and cultural divides and similarities opening up before their eyes.

5 To find where the greatest local divides in the country are someone needs to call out numbers: 'Is there any pair of people in the room who differ on all ten identities? On nine? How many on eight?', and so on. Where are these divides and is a pattern beginning to form to connect them? Are any two neighbouring areas identical in their identities? Are any pairs of non-neighbour areas identical in their identities?

6 Finally, start with the greatest local divides identified above and attempt to connect them using the next greatest adjacent divides to eventually divide the room and yourselves into two roughly equally sized groups. Your dividing line should ideally be continuous. It may become quite convoluted and complex as you attempt to link enclaves and exclude pockets that do not fit their original side of the line. It is advisable, and mildly amusing, to use a ball of wool to construct this line, starting with the pair of individuals who have least in common holding the wool in the middle and sending both ends out either way from between them to attempt to eventually join those two ends together again, having split the country in two.

With over 84 players it may be advisable not to attempt this last part of the exercise, especially if anyone needs to use the toilet in the near future.

If you are wondering what the purpose of the exercise is, it is to dispel a myth. It is often said by eminent social researchers that it is not possible to define areas as being rich or poor and to then expect them to contain most rich or poor people within them (or any other two groups). This is not true. It is possible. It is just that the dividing line you might have to construct, to be perfect, would be very long and very complex. It would snake up one street, taking in the odd house or two, then encompass an entire estate, save for a single person living in a flat in the middle, for whom a special loop would have to be drawn. The line would appear fractal in shape, like a coastline but even more convoluted than that.

Such lines are drawn everyday in the world. Rather like geo-demographics, there is a small industry that has developed to draw them. Political maps and voting districts are constantly redrawn, often in the interests of a particular group or party. This is known as gerrymandering, particularly where the attempt is to draw lines around voters to win seats. The job of gerrymanderers can be even more complex than yours when they try to draw lines around groups of people who are different from one another to ensure that the group they favour is just larger than the group they do not like; but more on them in the next chapter.

Finally, having geographically divided the country into two halves, compare the differences between areas either side of the dividing line to the differences between areas on the edge of one half and in its centre. Do areas either side of the line have more in common with each other than they do with other areas in their half? If so, what maintains the line of the line?

Chapter 5
Politics*...counting democracy, wasting votes*

An exercise
First-past-the-post elections are very easy to understand, or at least they appear to be. As the maps in this chapter have shown, it is much harder to understand what they result in or why there are particular patterns as to who does not get what they wish for despite voting, than it is to understand the voting system. Under the Westminster first-past-the-post system anyone who is over 18 and not in an excluded category can stand as an MP provided that they can find enough money to pay the deposit required (which they lose if they secure less than 5% of the vote). They also need to be able to take the time off work or childcare to campaign, so most people are excluded. However, they only have a chance of winning if they are selected by one of the two or three main parties in an area, and usually it is just one party whose candidate has any chance of winning so the votes don't count; what matters is winning the party selection process.

Here is how to play – "Who wants to be a member of parliament?":
1. Each player, each person in the class, needs to choose a persona from having carried out the exercise at the end of Chapter 4. The quick way to do this is to pick a number from one to 64 at random. To do this you start with the number 1. Toss a coin, if it is heads add 1, do it again, if heads add 2, again add 4, again add 8, again add 16, again add 32. At each point if it is tails add nothing. Use that number to select one of the English European constituencies from 1 to 64. Suppose you tossed only tails. Your number would be one and your constituency would be London central. Your characteristics would then be:
   > Female
   > Aged 25–29
   > Black African
   > Muslim
   > Single
   > Living alone
   > Many neighbours left the area since last year
   > Born outside the European Union
   > Has a university degree or equivalent
   > Professional occupation
2. Each person then needs to decide for which political party group they want to be an MP. It might be wise to pick a party that you think might be more sympathetic to someone from your background. Choose between three main parties, Conservative, Labour and Liberal Democrat and get into groups (by political party). If you cannot choose between these three you can join a fourth group called "most voters".
3. Within each group you need to pick a single candidate. The following instructions tell you how to do this. If you are in the "most voters" group then simply chat about the weather or what happens to be interesting you today. Whatever you do don't talk about politics as you are representative of most people and most people don't do this.
4. If you are within one of the main party groups each of you decide whether you need to rule yourselves out. For instance you must be a British, Irish or

Commonwealth country citizen to stand; you must also think you have the time and the personality needed.

5. All those not standing within each party make up the selection committee. You need to interview each candidate in turn, ask them about their background, whether any of it is relevant to their candidature and how the skills they have might be useful in getting them elected. When all have been interviewed, vote for a winner.

6. If you are within the "most voters" group carry on talking about the weather, where you would like to go on holiday or if you can go on holiday, what you hope for the future and who is to blame for things not being as you might wish (but don't mention politics).

7. If you are within one of the three party groups the time has come to hold an election. If you are the Liberal candidate you have lost. That is what happens to almost all Liberal candidates. Pick another random number from 1 to 64 and then look at how the votes are normally distributed in that area using Figure 5.1. If normally more than 60% of the seats are won by the coalition then the Conservative candidate is duly elected. If less than 40% normally go to the coalition then the Labour candidate is elected. Otherwise, if the proportion is between 40% and 60%, go to step 8 below.

8. If you happen to have chosen somewhere where the result is not likely to be a foregone conclusion then you need to involved the "most voters group". Whichever of the two main candidates' parties has the most money in their pockets is allowed the most time to convince the "most voters group" to vote for them. Share out 60 seconds in proportion to how much money both parties have. This is called campaigning. Good luck (although luck doesn't have a great deal to do with it).

Chapter 6
Inequality...*income, poverty and wealth*

An exercise
Read the article below then follow the instructions after it:

Adding up to much less
Paul Foot, Wednesday 26 November 2003, The Guardian
"On September 26 [2003], the leader of the House of Commons, Peter Hain, was on the BBC's Newsnight proclaiming the progressive reforms of New Labour. High on the list, he claimed, was the closing of the gap between rich and poor.
"If you look at the figures," he said, "the bottom tenth of the population have seen their incomes increase by 15%, while the top tenth have seen their incomes reduced by 3%. That's redistribution."
This seemed so unlikely that I contacted the Office of National Statistics (ONS), now attached to the Cabinet Office. To my surprise, the figures it gave me confirmed what Hain said. The earnings of the poorest tenth, they revealed, had risen steadily since 1997, but, astonishingly, the earnings of the richest tenth, after growing even faster every year until 2001, suddenly and sharply went down in 2002.
I went back, twice, to the ONS, requoted the figures they had given me, expressed my doubts, and asked for an explanation. Back came the reply that the figures had been "double-checked" and were "correct".
No doubt about it, then. Peter was right and my scepticism was wrong. But wait. Early this month, the ONS sent me a new set of earnings figures, updated to 2003. They flatly contradicted the figures given to me previously. They showed a steady annual increase in earnings for both the poorest and the richest tenths at about the same rate from 1997 to 2003.
What was going on? I consulted Incomes Data Services, a specialist in such matters. Its explanation was rather shocking. "The ONS," it said, "has made a mistake. It has given you the upper quartile (quarter) figure for 2002 when it should have given you the highest decile (tenth)." The real figures for the richest decile showed a steady rise in earnings in every year from 1997 to 2003. So, under New Labour, the rich are getting richer and the gap between rich and poor is getting wider.
The ONS now admits its error, and has apologised to me. Where does that leave Peter Hain? His spokesman tells me that Hain's claim on Newsnight was based on a survey by the Institute of Fiscal Studies, whose press release concluded: "Focusing on (tax and benefit) measures that directly affect household incomes and spending shows a progressive pattern, varying from a boost of more than 15% to the incomes of the poorest tenth of the population to a loss of nearly 3% for the richest tenth". That says, vaguely and almost incomprehensibly, something rather different to what Hain claimed.
Much more specific and reliable are the latest figures from the Inland Revenue on the distribution of marketable wealth – which includes rent, dividends and other windfalls of capitalism. They show that the richest 1% of the population had 20% of the nation's wealth in 1996 and, thanks to Peter Hain and New Labour, 23% in 2001. This is a bigger, quicker leap in the booty of the mega-rich than anything achieved under any other postwar government, including Thatcher's. As for the poorest half of the population, they had 7% of the wealth in 1996. And after the first four caring years of New Labour, their share dropped – to 5%."

The newspaper article contains seven paragraphs, nine percentages, 13 dates and 538 words. Newspaper articles are often written 'from the top' so that the reader receives most information early on and need not read to the end. However, in this case, without reading to the end you cannot understand the beginning. Most readers do not read to the ends of most articles which they begin, especially ones which are complex, and this article is unusually complex although its author has written about as clear an account of events as is possible. Five people are involved:

1 Paul Foot – journalist who specialised in exposing corruption in the UK.
2 Peter Hain – MP and at the time Labour leader of the House of Commons.
3 ONS spokesperson – nameless representative of the national statistics agency.
4 IDS specialist – nameless 'independent expert' from a private company.
5 Hain's spokesperson – nameless governing political party worker.

What do you believe motivated each of the actors in this story? To what extent are the various motivations a combination of overly suspicious minds, over-enthusiasm, incompetence, maliciousness, disingenuousness or other motives? For instance, does the rich becoming richer in terms of income necessarily mean that the gap between rich and poor is becoming wider? Does Paul Foot confuse income with wealth and with what significant implications, if any? With such questions in mind write a fictional letter to be published in the newspaper from the point of view of either Peter Hain, the ONS, the IDS or Hain's spokesperson either objecting to the piece or supporting it. Write the letter in pairs and then, as a class, act as the Letters Editor of the newspaper and select those three or four which read best for publication (vote on it). Remember that letters to newspapers tend to be very short and to the point. Now each write a fictional reply from the point of view of Paul Foot to one of the letters and select the letter that you think is most convincing as a group by vote. Finally, if you find this interesting, find out what has happened to trends in income and wealth in the UK since this article was written. If you can find this out, perhaps using the same methods which Paul Foot used, can you then write an article on it which is clear, well-written and could potentially be published?

Chapter 7
Health*...the sedimentation of society*

An exercise

Table 7.1 from the book lists the major causes of mortality in England and Wales in the year 2010, their ICD codes, disease label and the cumulative chance of dying of each cause of death (in the first column as measured out of 1024). Thus a man or boy has about a 5.8% chance of dying of a disease not listed in the table and a woman or a girl an 8.3% chance (see the first two numbers in the first column of the table below for where those percentages come from).

We can use the first column, the "cumulative chance out of 1024", and a coin, to give each member of the class a cause of death at random, assuming that the patterns in the future are similar to those in 2010. The distribution of causes of death in the class should then reflect those in society as a whole.

To play the game each student needs a coin. Heads are '1' and tails are '0'. They will need to toss their coin 10 times to determine their allotted cause of death. This method is similar to that used in the exercise at the end of chapter 6. Begin with a chance of 1 out of 1024. Toss the first for the 1st time, if you get heads add 1, otherwise add nothing. Do this again a second time, but add 2 if you get heads, again nothing if you get tails. Do it again, adding 4 for heads; again, adding 8 for heads; again adding 16; again, adding 32; again, adding 64; again, adding 128, again, adding 256, and again, adding 512 if you get heads. Ten heads and your number is 1024 and you are dying of an external cause (other). There are different chances for men and women (use the rows marked M and F below)

This game may appear a little complex but all that it involves is in effect turning up to 10 tosses of a coin into a number between 1 and 1,024 to give a probability which can then be used to allocate a cause of death from Table 7.1. By reading down the first column until you come to your number or a number larger than it, it quickly becomes apparent which cause of death you have been allocated.

Here's a worked example. I start with the number 1 and toss, tails, heads, tails, heads, tails, heads, tails, heads, tails, heads. My score is 1+0+2+0+8+0+32+0+128+0+512 = 683. I decide I am male and look down the first column until I get to 767, the first number equal or greater than mine. I read across and see I am to die of "IX (other) Diseases of the circulatory system". Reading up to see what I have just skipped I work out that this will be a more obscure disease of my heart and blood vessels, but not Acute myocardial infarction (heart attack), Other heart diseases, Cerebrovascular diseases, or an Aortic aneurysm. Well, that doesn't sound too bad.

Having allocated each member of the class a cause of death at random, next work out which groups of causes are most numerous in your population – infectious diseases, cancers, diseases of the blood and so on. For the most common causes, see if you have people allocated similar causes within those groups. It is important to remember that these causes have been allocated at random. They mean nothing for the people specifically allocated a cause. Some congenital causes (which are mostly included in the first group) only kill young babies, for instance, and several causes largely only apply to either men or women. However, for the group as a whole the distribution should be interesting. Here are a series of questions you can ask:

1. Are there causes that people are concerned about, for instance accidents or pneumonia, which no one in your class has been allocated? Is this because they are rare or because of chance? If you think it is chance, try another random allocation of the class. If you are very good at maths, work out how many allocations you would have to make, given the size of your class, on average, until these causes were allocated.

2. What will kill the bulk of students in your class if they are representative of the population of England and Wales, and if future causes of death are distributed as they are now?

3. Can you think of any reasons why your actual causes of death may be different from those allocated by this procedure, even if future causes of death are distributed as they are now?

4. Which of the causes that have been allocated do you think students will be less likely to die of in the future and which more likely, and why?

5. Given the maps above and the location in which you are playing this game (if that is in Britain) how might your local geography influence these chances?

6. Finally, the table also includes information about the rates of death per million at particular ages. Ignoring the first general category, of "not listed below", what does kill most people of your group's average age?

Chapter 8
Work...*the segmentation of society*

An exercise

Segmentation and polarisation are not simple things to measure and there are no set ways of defining them. Take as an example the ten distributions just described in this chapter. In each case you need to go to the website of this book to get the underlying data which provides you with both the proportion of people allocated to each particular group in 1991 and how that proportion has changed in the years to 2001, allowing you to also calculate the number of people so allocated at the end of the period. The first website of the book, which used very differently presented maps, also has this data shown within each map, and it can be found at http://www.sasi.group.shef.ac.uk/hguk/chapter8.htm which is the web address for the old maps of chapter eight of this book.

If you sum the two percentages shown in each area on the old maps, the first versions of these maps to be drawn, then you will find the proportion working in that industry in 2001. All the figures in that on-line map, and in the nine which follow it, are proportions, expressed as percentages, of the entire population. They follow the same format to aid comparison. The versions shown in this book are simpler, just using four shades, but relying on exactly the same data. Whichever way you access it, you end up with ten sets of data, and each set containing two times 85 statistics. Although the numbers are only provided as whole percentages, without having this dataset on computer there are too many distributions to consider for any one person, therefore each select one of the ten distributions to study.

If there are 20 or more of you, you can each also select a year to study, either 1991 or 2001 (although the first and fourth methods defined below allow you to consider both years simultaneously). You need to determine how spatially polarised people were in the year you are looking at for the variable you are considering. There are many ways in which you can do this, some are listed below. Agree a method among yourselves, perhaps more than one, calculate the degree of polarisation which has occurred and then read on. Here are some methods you can use:

1. Most simply, you can say a variable is polarising over time if the majority of areas fall into the shading categories: low and falling or high and rising. However, some variables are rising in every area or falling everywhere. In those cases you can subtract the national average (say median) change from the change measured first, and then redefine every place as either rising or falling in terms of national changes. Work out the median change simply by writing down the changes in order and selecting the middle, 43rd, one.

2. You can measure the degree of segregation of a group at a given time. For instance, what proportion of people in the country would have to move between areas for that group to be evenly distributed across the United Kingdom? Or what proportion of the group would have to move, or what number of people would have to move, or what number or proportion would have to move if that group were to be distributed as everybody not in that group is! You have a lot of options as to how to calculate just these simple measures of segregation.

3. You can measure the chances of someone chosen at random from the group you are studying meeting another person from the same group if that person were also chosen at random from within their area. This is called an isolation index and is easier to calculate than to describe (it is simply the sums of all the proportions

weighted by those proportions, as you can assume each area has equal population). One problem for this index is that it tends to be higher the larger the proportion of a group is nationally. Can you correct for that?

4. You can work out some average changes and draw a histogram of the results. For instance, in areas (grouped) which had a high proportion of people in a group in 1991, what has the average change in their numbers been? What about for average areas, below average areas and so on? For each type of area, as defined by proportion in 1991, there will have been an average change, which you can calculate. You can draw a histogram of those changes. If the tails of the histogram tend to rise and the centre falls, then polarisation has occurred. But what if the pattern is more complex than that?

5. Think up your own way of measuring polarisation or segmentation and change in those measures. Ideally your measure should be simple to understand and preferably simple to calculate. It should measure something which is meaningful, its size should mean something and changes in its size should be readily interpretable. Can you think of a better way of describing whether the patterns shown in the maps above really do represent growing cleavages in the human geography of society or whether the changes are not as dramatic as that?

Having measured the levels of polarisation or segmentation in whichever way you have chosen, and having looked at the change over time in those measures, you next need to interpret the results. What has been going on? How would you explain your findings to an audience similar to yourselves? Can you appreciate why I have not included such measures here – or would their inclusion have altered the story being told in the chapter above? Should I have included such measures?

Having done all this work, what criticisms would you make of this chapter of the book? Can you tell simply from looking at the maps how they are changing? Is the United Kingdom becoming a more or less divided place, at least by what these measures show? And finally, why consider these measures? What really matters most about places in people's lives?

Chapter 9
Home*...the settlements of society*

An exercise

Try to imagine how the country might look if this book were to be rewritten in 50 years' time. Today's university leavers will be of pensionable age, but which will have good pensions? Where will they have moved to, and how will they be accommodated? Many of their parents will still be alive if life expectancy continues to rise as it has done for the last 50 years, but who will be caring for them? There will be fewer people of working age and fewer children again, unless today's school leavers behave differently from their parents or unless more young people come into the country than leave it.

In 2062 of what will the housing stock be made up? How many of the Victorian terraces will still be standing? What will be the state of the homes built around the middle of the last century, now all at least a century old? And will some families still have the state or its agents as their landlords? Which settlements will have declined and which will have grown? Will the old still move to the coast? Will the young still cluster in university towns and move in large numbers to the Capital? Will fewer or more people be ill? Of what will the population now be dying? What could the human geography of the United Kingdom look like in, say, 2055, if there is a 'united' Kingdom then?

Speculation over the future is a fraught but interesting exercise. One way to conduct it is to divide your speculation up by how uncertain you are about different issues. Start with issues you think are more certain, move on to things which are more uncertain, and end with pure speculation. To start you off here is one possible way in which you could begin with a set of issues to consider:

1. More certain: We largely rely now on infrastructure built over 50 years ago – roads, rail, sewers and houses. Thus we largely live in the same places we lived in half a century ago. What is the state of this infrastructure? What kinds of things could you expect to see built in the coming years? For example, airports often take decades to plan and build. High speed rail tracks can take even longer. What might the impact of such changes be?

2. Less certain: Some aspects of human life change slowly and in one direction for long periods of time, for example the fall in fertility, the rise in life expectancy, people being educated for longer and longer periods, national wealth rising, inequalities not tending to diminish. If those aspects of life in Britain which have changed slowly and in a steady direction for most of the last 50 years were to continue on their way, what would the future hold for us? What if you include trends which appear to be cyclical such as economic recessions?

3. Pure speculation: Most forecasts of the future appear to work until something unusual occurs and there are many unusual things which can occur. The population of Britain was last altered significantly by a major infectious disease pandemic and a war over 90 years ago. How would we cope with such an event in the future? We were last on the receiving end of a major war over 50 years ago. War has far from ended around the globe, so what if we were at war at home again? Both over 100 and 60 years ago radical governments took power in Britain and instigated many changes to improve people's lives. Could that happen again? And what could happen that you have not thought of?

Having thought up a set of issues and characterised them into the three groups above, set to work on outlining possible scenarios for the future, and divide the work up. Draw possible maps of the future. These are far easier to draw than are maps of the present because you can simply make the data up. All you need is for your map to be plausible. For instance, draw a map of the results of a fictional general election in 2055. What kinds of political party might there be and what voting system? Will some children now be allowed to vote or will voting rights be more restricted than today? You may think it unlikely that there will be such elections in 50 years time, after all, elections in which almost all adults are allowed to vote are less than a century old in this country and there have been only just over two dozen of them, hardly a long time series. But even if you think like this, try to draw a map of how the alternative to elections might operate.

The one thing you can be (quite) sure of is that there will still be a distinct geographical pattern to the lives of people on and around this island. There always has been. Perhaps the hardest future to imagine is one in which every place becomes more similar to every other as the people living there are concerned. You could move around the country but you could not tell where you were from, what the people there were doing, how they were living and what they had. It is a difficult future to imagine unless, that is, you were a child of the late 1970s and early 1980s in this country. Then, if you had believed the rhetoric of government, there would be equality in the future. The poor would grow rich on the trickle down of monies from the affluent, state housing would all be sold to its inhabitants and the future would be a rosy, prosperous hard-working utopia for all, even for the inhabitants of 'those inner cities' for which they had 'task forces'. In secret government minsters planned for the "managed decline" of parts of the north such as Liverpool. This was only revealed thirty years later in January 2012 when cabinet minutes for 1981 were declassified.

If you believed some of the opposition to the government of those days, then the future was to be equally equitable if a little more bleak. The opposition said that the government was trying to manage the decline of much of the country outside of South East England (and that now appears to have been the case). Much more seriously, some parts of the opposition warned that with America's aid we would manage to engage in a nuclear war. Most of us would be killed and the survivors would 'envy the dead'. If this occurred then there would be little variation in the remaining conditions of living across the Kingdom (which would almost certainly no longer be a kingdom), although you'd be well situated if you could get to the Caledonian canal, which would have become the major new trade route for a rapidly emerging new stone age.

Safe to say neither of those predictions came true. The Labour opposition came to power and it said that we would live with greater equality in the future, as government would 'bring Britain back together again', but few believed they would. If you believed other voices, including the barely concealed voice of parts of the government, then what we had most to fear was a bomb or a virus, no longer from the Russians, but still hitting our major cities. In fact what we had most to fear turned out to be what was being most celebrated. The supposed success story of the financial wizardry of London bankers turned out to be a bomb of a different kind, one which blew up the national finances in 2008.

As I write this we are told that there will soon be a "Big Society" and people will come together again with a little encouragement from government to help each other. There is always speculation that somehow we are on a particular road to some kind of a utopia and in some ways it doesn't change a great deal – the authors and actors are altered but the scenes portrayed remain much the same. Unless I am

extremely lucky, I won't be around to see what the world looks like in 2062. For my generation and older folk, your predictions cannot be proved right or wrong.

Chapter 10
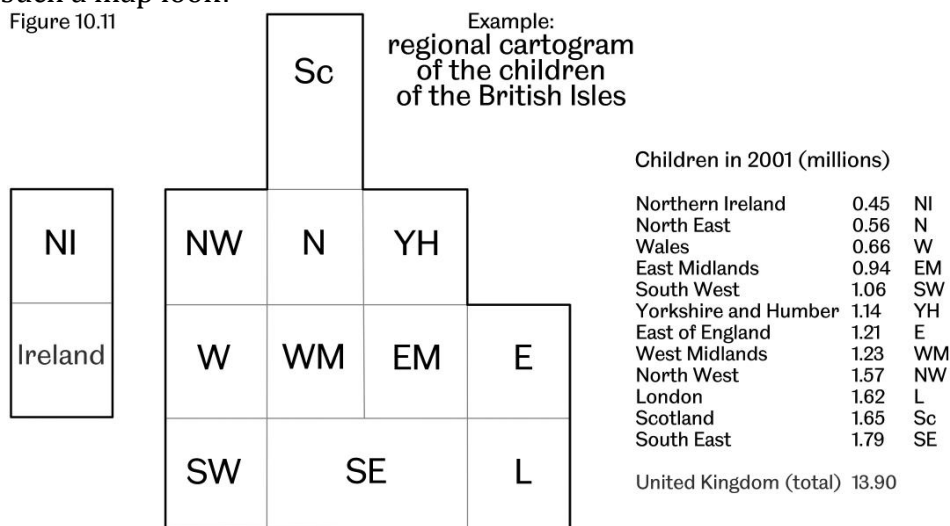## Abroad*...the Kingdom's place in the world*

An exercise
Mapping the population of the world is far more difficult than charting it within one rich nation for which there is abundant information. National censuses are often not taken in many countries, so the results of surveys can be hard to compare. Most importantly of all, international statistics are almost always presented for states which vary enormously in population and for which averages tend to disguise huge internal variations.

The surveys which were used to generate the figures used to shade the maps in this chapter did differentiate almost universally between children living in rural or urban settlements and that alone showed that the worst conditions were concentrated out of the cities. Why else would so many people in poor countries be leaving the land for the cities?

One day soon maps will be drawn of the entire world's population that will differentiate both within countries as well as between them. The map base used here is the very first that could do this, but only if we had data for within country distributions as well as between country variations. Such maps will depict an even more starkly divided world than that shown in these pages on which, after all, the maps only depict up to 45 statistics. Suppose we had information on every square of the world cartogram, on the living conditions of every geographical concentration of 1 million children in the world. The maps would still be presenting averages of huge numbers of people, but for 2,150 regions rather than just 45 countries. How might such a map look?

Figure 10.11

Example:
regional cartogram
of the children
of the British Isles

Sc

NI

NW N YH

Ireland   W WM EM E

SW SE L

Children in 2001 (millions)

Northern Ireland	0.45	NI
North East	0.56	N
Wales	0.66	W
East Midlands	0.94	EM
South West	1.06	SW
Yorkshire and Humber	1.14	YH
East of England	1.21	E
West Midlands	1.23	WM
North West	1.57	NW
London	1.62	L
Scotland	1.65	Sc
South East	1.79	SE

United Kingdom (total) 13.90

Note: The UK represented by 14 squares
Source: 2001 Census data

To begin, draw an example of how a new world map might appear for the 14 million children of the United Kingdom. First you need to draw your base map. You could use the outline drawn in the world maps in this book, or a simpler one in which the Kingdom is allocated 14 squares on the map in a shape which very roughly approximates its boundaries. A rough example is provided in Figure 10.11 (see above) where the regions and countries of the Kingdom have each been allocated a square, the South East and Scotland, both with the largest numbers of children,

being allocated two squares. You need not use this example. Instead you could combine groups of six or seven of the European constituencies used in this book. One year's worth of their children are counted in Figure 1.3 of this book.

Next, each choose one example from this book of a variable for your 14 areas. Remember that as each of the areas used in this book contain roughly equal populations, in most cases you can simply sum proportions shown on these maps and divide them by the number of areas you are considering to calculate an average proportion which is representative of that group as a whole. Having drawn your map, next compare it to the original map of variation over 84 or 85 areas. How much of the original detail do you lose? The answer to that question depends on how much variation within regions there was to begin with.

A good example to take in the context of this chapter is employment in the financial industries, as depicted in Figure 8.2 in chapter 8 of the book. You will have to look at the website for this book to find the underlying data. To calculate the 2001 proportion in, say, London, simply sum all the proportions in the London areas shown in that website (both the 1991 and the change proportions) and divide the result by 10, as there are ten areas in London. It should not take you too long to draw one map of what could be part of a future depiction of the human geography of the whole world's workforce in financial industries.

Compare the maps that you have drawn and answer the following questions:
1. Which design appears to work best, is most visually appealing and presents the data both as simply and as accurately as appears possible?
2. Which design could most easily be extended to draw out a map of all the areas in the world in which 1 million children live?
3. How should such a world map be drawn, on where should it be centred, how should it be oriented (what should be at the top)?
4. To what extent does the loss of detail matter when this image is just part of a much larger picture? Does it really matter precisely which areas you combine to group a million children?
5. What information, if any, could you find to draw out variations in the globe in this way? Why is that information in some areas so limited and will there continue to be countries for the foreseeable future which will simply be labelled 'no data'?
6. What is the point of mapping the geography of people's lives in more detail? Does it serve a useful purpose or simply reinforce what we think we already know of our humanity and inhumanity?