



ENGLAND'S CHANGING SOCIAL GEOLOGY, 1991-2001

Don Vickers Department of Geography, University of Sheffield

Every area has an identity that comes from the people and buildings which reside within them. It is clear that these identities are not static, and that over time, changes can take place which alter the identity of an area. Anyone who revisits an area after a decade away will be familiar with this feeling, especially with recent regeneration of our cities and towns where new municipal landscapes can be seen across the country.

Does however, our social landscape change with this regeneration? After all, its purpose is to improve the lives of the people who live there. Can we see any real change in the social landscape of the country? The aim of this project has been to examine change in England's social geology via comparable small-scale area classifications developed from the 1991 and 2001 Censuses.

Area classification

Area classifications are an excellent way of simplifying complex datasets into a manageable set of indicators (Voas and Williamson, 2001). They have powerful predictive powers that can be used to explain any number of demographic trends and socio-economic processes (Harris *et al.*, 2005; Sleight, 2004). They can give us a valuable insights into how the population is socio-spatially sorted by residential location.

To find out if, and how, residential patterns have changed, a means of comparison needs to be created from an earlier data source. Thus, two comparable classifications have been created using data for 1991 and 2001. The methodology follows that used to create the National Statistics Output Area Classification (OAC) as described in Vickers and Rees (2007). The use of this methodology to examine change over time is experimental as it has not previously been tried.

Selection and reduction of variables

A selection of 22 variables was made from the two censuses with which to create these comparative classifications. The set of variables selected is a reduced version of those used to create the Output Area Classification (OAC) as described in Vickers and Rees (2007). This was necessary as some of the variables were not comparable. The 22 variables are shown in Table 1. In each case, the proportions of each variable in the population for each area were computed.

Methodology

The data from the 1991 Census were assigned to the geography of the 2001 Census output areas using a reweighting procedure based upon the population distribution within each of the areal units. The output areas were then divided into seven groups with the use of a k-means clustering algorithm on the 2001 data.

The 1991 data were then assigned to the groups they were closest too. This created a group membership for both years of data and, by comparing the membership of each group at both time periods, a comparison of how social patterns have changed between the two points could be made.

Table 1 shows the values of the cluster centres for each variable. The values have been standardised, with the highest possible value being 1 and the lowest being 0. For example, cluster 6 has the highest value for the 'proportion of flats', but has the lowest value for 'households with two or more cars'.



Variable	Cluster						
	1	2	3	4	5	6	7
Age 0-4	.17	.24	.18	.31	.19	.24	.26
Age 5-14	.13	.23	.23	.29	.22	.20	.29
Age 25-44	.47	.41	.30	.38	.34	.36	.33
Age 45-64	.31	.34	.50	.28	.43	.31	.33
Age 65+	.15	.13	.18	.10	.18	.21	.18
Indian, Pakistani and Bangladeshi	.05	.03	.01	.44	.02	.06	.02
Black African, Black Caribbean and Black Other	.07	.02	.00	.14	.01	.16	.02
Born Outside the UK	.23	.08	.06	.39	.06	.21	.05
Unemployed	.14	.12	.06	.20	.08	.24	.18
Working part-time	.18	.30	.32	.22	.33	.21	.30
Economically inactive looking after family	.15	.18	.19	.34	.16	.25	.29
No central heating	.13	.15	.04	.19	.07	.08	.12
Rent (private)	.30	.13	.06	.17	.06	.08	.04
Rent (public)	.14	.11	.03	.18	.08	.67	.52
2+ car households	.17	.25	.57	.18	.38	.08	.16
Flats	.68	.10	.03	.17	.08	.77	.17
Detached	.05	.06	.67	.05	.21	.02	.06
Terraced	.17	.66	.06	.57	.15	.12	.36
Lone parent household	.11	.18	.08	.21	.12	.23	.28
Single pensioner household	.16	.13	.12	.10	.16	.25	.19
Single person (not pensioner) household	.33	.19	.09	.16	.12	.28	.15
Population Density	.17	.14	.04	.21	.08	.23	.10

TABLE 1. FINAL CLUSTER CENTRES OF THE SEVEN CLUSTERS CREATED

Cluster names

To give more meaning to the clusters, each was given a simple indicative name suggesting a flavour of what both the geography and social make-up of that cluster are like. This is not to say that the areas within each cluster are all the same or the names describe all areas equally as well, but the names are indicative and should be taken with a pinch of salt. However, they are of great value when trying to understand the make-up of each cluster. The cluster names are as follows:

1. Urban Melting Pot
2. Mixed Communities
3. Out in the Sticks
4. Asian Influence
5. Middle Class Achievers
6. Down and Out
7. Working Class Endeavour.

Results

This section outlines the results of the clustering process and examines the changes that have taken place between 1991 and 2001.

Table 2 shows how the frequency of each group has changed. Evidence suggests an increase in the more mixed areas such as 'Urban Melting Pot' and 'Mixed Communities' and a decrease in areas of what may be thought of as more traditional types such as 'Middle Class Achievers' and 'Working Class Endeavour', but also an increase in the prevalence in the number of areas classified as the poorest type, 'Down and Out'. Not only are these type of areas increasing in number, they are also becoming more geographically spread within the cities in which they can be found. This pattern is similar to that found by Dorling *et al.* (2007) who argued that there is a process of greater polarisation taking place within Britain.

	1991 Frequency	1991 Percent	2001 Frequency	2001 Percent	Change Frequency	Change Percent
1: Urban Melting Pot	11,350	6.9	15,392	9.3	4,042	2.4
2: Mixed Communities	21,949	13.2	25,910	15.6	3,961	2.4
3: Out in the Sticks	32,915	19.9	35,704	21.6	2,789	1.7
4: Asian Influence	5,039	3.0	4,930	3.0	-109	0
5: Middle Class Achievers	50,578	30.5	46,791	28.2	-3,787	-2.3
6: Down and Out	8,257	5.0	10,878	6.6	2,621	1.6
7: Working Class Endeavour	35,577	21.5	26,060	15.7	-9,517	-5.8
Total	165,665	100.0	165,665	100.0	0.0	0.0

TABLE 2. THE CHANGE IN THE PREVALENCE IN EACH CLUSTER



		Cluster in 1991							
		1	2	3	4	5	6	7	Total
Cluster in 2001	1: Urban Melting Pot	9,200	1,318	195	467	2,245	1,116	851	15,392
	2: Mixed Communities	779	15,991	237	432	3,445	76	4,950	25,910
	3: Out in the Sticks	23	206	26,561	6	8,444	8	456	35,704
	4: Asian Influence	153	519	3	3,699	117	129	310	4,930
	5: Middle Class Achievers	482	2,628	5,658	103	33,044	27	4,849	46,791
	6: Down and Out	618	126	29	204	505	6,401	2,995	10,878
	7: Working Class Endeavour	95	1,161	232	128	2,778	500	21,166	26,060
	Total	11,350	21,949	32,915	5,039	50,578	8,257	35,577	165,665

TABLE 3. CHANGES IN CLUSTER MEMBERSHIP, 1991-2001

Tables 3 and 4 outline how these changes have come about by looking at how areas have changed from one type to another. Talking so much about change and movement, it is easy to miss the biggest trend within the data which is that 116,062 (70%) of the 165,665 areas have not changed in terms of which group they are in over the 10 year period, whilst 49,603 areas have changed from one cluster to another.

The most common change (37% of areas) is for an area to change from 'Middle Class Achievers' to 'Out in the Sticks', a change which is almost certainly found by increasing polarisation and movement of all but the well-off from rural locations. There is a breakdown of traditional working class areas, these areas changing in both directions. Some areas are improving which is likely to be due to increased investment and gentrification and is characterised areas of 'Working Class Endeavour' in 1991 which have become 'Mixed Communities' by 2001. In contrast, other areas which were 'Working Class Endeavour' in 1991 were classified as 'Down and Out' in 2001, suggesting that these

areas have not done well over the period.

These changes are, on the whole, likely to have been due to differing levels of investment which have led to the socially mobile either moving in or out of these areas. There are many ways in which an area's social profile can change. These may be complex but can be simplified to the following four types:

- an area's social profile rises if the poor move out;
- an area's social profile rises if the well off move in;
- an area's social profile falls if the well off move out; and
- an area's social profile falls if the poor move in.

These movements of people cause a shift in the social profile of the area termed 'downshifts' or 'upshifts' depending upon whether the social profile of the area has significantly fallen or risen because of the changes. Of the

		Cluster in 1991							
		1	2	3	4	5	6	7	Total
Cluster in 2001	1: Urban Melting Pot		-539	-172	-314	-1,763	-498	-756	-4,042
	2: Mixed Communities	539		-31	87	-817	50	-3,789	-3,961
	3: Out in the Sticks	172	31		-3	-2,786	21	-224	-2,789
	4: Asian Influence	314	-87	3		-14	75	-182	109
	5: Middle Class Achievers	1,763	817	2,786	14		478	-2,071	3,787
	6: Down and Out	498	-50	-21	-75	-478		-2,495	-2,621
	7: Working Class Endeavour	756	3,789	224	182	2,071	2,495		9,517
	Total	4,042	3,961	2,789	-109	-3,787	2,621	-9,517	

TABLE 4. THE BALANCE OF MOVEMENTS BETWEEN THE CLUSTERS, 2001-1991

changes that can be seen, 10,980 areas can be said to have experienced a significant 'downshift' based on their change between area types, with 6,185 areas experiencing an 'upshift'.

Conclusions

This project provides an overview of how the social geography of England is changing. Overall the biggest story is that the majority areas do not change in terms of the group they belong to over the period, with their relative position in the social hierarchy unchanged.

However, movement of areas between cluster types can be seen, with changes suggesting an increasing polarisation within society. The number of areas within the worst-off group, 'Down and Out', increased by 2001 despite also some areas moving up and out of this type. An increase can also be seen in the 'Out in the Sticks' group which is the most geographically separated and areas which are increasingly becoming economically separated as it becomes increasingly difficult for anyone but the well off to live in a rural setting.

This process of the country splitting with increasing polarisation at both ends of the socio-economic spectrum is supported by Dorling *et al.* (2007) who found a similar polarisation taking place over a longer time period.

On the whole the experimental methodology seems to have been fairly successful. Although obviously hampered by the different geography at the two time points. It is expected that the geography of the 2011 Census will experience less change than has been seen in the past so a comparison of 2001 and 2011 could be a possibility for future research. Areas that have changed clusters on average further from a cluster centre than those which have not moved suggesting that some of the changes that have been seen are not significant as many of these areas were on the edge of clusters to begin with.

References

- Dorling, D., Rigby, R., Wheeler, B., Ballas, D., Thomas, B., Fahmy, E., Gordon, D. and Lupton, R. (2007) *Poverty, Wealth and Place in Britain, 1968 to 2005*, Joseph Rowntree Foundation, York.
- Everitt, B. S., Landau, S. and Leese, M. (2001) *Cluster Analysis 4th Ed*, Arnold, London.
- Harris, R., Sleight, P. and Webber, R. (2005) *Geodemographics, GIS and Neighbourhood Targeting*, Wiley, Chichester.

Orford, S., Dorling, D., Mitchell, R., Shaw, M. and Davey Smith, G. (2002) Life and death of the people of London: a historical GIS of Charles Booth's inquiry, *Health and Place*, 8: 25-35.

- Sleight, P. (2004) *Targeting Customers: How to Use Geodemographic and Lifestyle Data in Your Business*, World Advertising Research Centre, Henley-on-Thames.
- Vickers, D. and Rees, P. (2007) Creating the National Statistics 2001 Output Area Classification, *Journal of the Royal Statistical Society, Series A*, 170(2): 379-403.
- Voas, D. and Williamson, P. (2001) The diversity of diversity: a critique of geodemographic classification, *Area*, 33, 63-76.

Acknowledgements

The funding for this research was provided by an ESRC Postdoctoral Fellowship (Award PTA-163-27-1006). Thanks must go to Graham Clarke for acting as mentor during the period of the fellowship, to Danny Dorling and Phil Rees for their comments and advice on the research and to Paul Norman for his help with joining the 1991 and 2001 datasets.

Relevant publications by the author

- Vickers, D. and Rees, P. (2007) Creating the National Statistics 2001 Output Area Classification, *Journal of the Royal Statistical Society, Series A*, 170(2): 379-403.
- Vickers, D. and Rees, P. (2006) Introducing the National Classification of Census Output Areas, *Population Trends*, 125: 15-29.
- Vickers, D., Rees, P. and Birkin, M. (2005) Creating the national classification of Census Output Areas: data, methods and results, *Working Paper 05/2*, School of Geography, University of Leeds, Leeds.
- Vickers, D. and Stillwell, J. (2005) Area classification in Yorkshire and the Humber: a region of diversity? *The Yorkshire and Humber Regional Review*, 15(2): 10-11.

Contact details of the author

Daniel Vickers, Room F13, Department of Geography,
The University of Sheffield, Sheffield S10 2TN
Email: D.Vickers@Sheffield.ac.uk
Web: http://www.shef.ac.uk/geography/staff/vickers_dan/index.html
Web link to area classification:
www.areaclassification.org.uk