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Central Place Theory and Geodemographics
The application of Central Place rank values to Zones of Residence

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1 : Why associate types of neighbourhood with levels in the urban hierachy?

For many years geographers have been interested in the extent to which urban settlements can be positioned on a hierarchy from 'higher order' to 'lower order' centres[1]. Lower order centres contain a limited set of functions and service what are essentially local communities. These are places which might have a Post Office, perhaps an outlet of a multiple retail chain, perhaps a secondary school, perhaps a church. Such places are thick on the ground and seldom far apart. By contrast higher order centres contain a much more extensive set of functions and service large populations many of which live at considerable distances from their centres. Such centres might be large enough to support a Football League football club, a theatre, a television studio or the headquarters or a regional daily newspaper. London would be an example of a centre of the highest order, having a parliament, a central bank, a royal palace and an international airport with scheduled services to all continents.

For many years geographers have also been interested in the extent to which residential neighbourhoods can be classified into a limited number of residential neighbourhood types[2]. Classifications of small residential areas have by now been commercialised in 18 different countries around the world and are used extensively both for location planning and for the targeting of communications. Such classifications divide national populations typically into between 30 and 65 types of neighbourhood, assigning small areas to the most appropriate type on the basis of a wide variety of demographic measures, many of which are taken from small area statistics published by national statistical offices. Such classifications are increasingly being used to analysis public sector operational data sets such as Hospital Episode Statistics[3] and the Pupil Level Annual School Census.

The current UK Mosaic classification, developed by Experian, uses 400 demographic measures to classify the UK's 1.4 million postcodes into 61 types. The statistical profile which distinguishes each type is summarised (not without some difficulty) into a 20 character label. These labels in various instances may highlight the predominant age group, eg 'Cared for Pensioners' or occupations, 'Caring Professionals', or sometimes types of housing, 'Bungalow Retirement'. However, compared with earlier versions of Mosaic, the classification launched in 2003 incorporates a much larger number of labels which describe the central place status of the centres in which they are predominantly located. Examples are 'Global Connections' and 'Metro Multiculture', 'Provincial Privilege', 'Original Suburbs', 'Sprawling Subtopia', 'Town Centre Refuge' and 'Small Town Seniors'[4].

The use of central place terminology in the Mosaic labels is, in a sense, accidental. No statistic relating to the central place position of postcodes is included in the clustering algorithm used to build the typology[5]; nor are the Mosaic types deliberately ordered on a metropolitan to rural continuum. Nevertheless it would not be surprising if certain types of neighbourhood, defined by the system, were to be located predominantly in London, that some would be concentrated in Britain's largest provincial centres whilst others would be associated with smaller market towns and their surrounding rural hinterlands.

Why this apparent link between central place rank and geodemographics is potentially interesting is that it may be possible, by examining the association between geodemographic categories and central place rank, to start to measure the average central place rank position of the residential population of an area, whether it be that of an entire urban area or that of specific communities within its sphere of influence. Were this to be possible it would then be feasible to extend traditional central place analysis in a number of ways.

For example whereas the central place ranking[6] of an urban centre can be measured according to the number and variety of central place functions which it offers to its residents, or according to the number and variety of shops in its retail centre, it might also be possible to measure the central place position of a centre according to the presence and frequency of different types of neighbourhood within its hinterland. Does a centre contain the types of residents and residential neighbourhoods which are generally characteristic of higher order or lower order centres?

If such measurement can take place then it becomes possible to create and measure a set of 'contours', showing where within the hinterland of a centre the residential neighbourhoods most typical of higher order or lower order centres are located. For example it may be possible to examine within Manchester's urban sphere of influence whether types of neighbourhoods associated with a major provincial centre are evenly distributed in all directions from the centre or whether the peculiarly metropolitan character of Manchester extends to a greater extent and/or to a greater distance to the South of Manchester (as one might reasonably expect) than towards the East.

If such measurements can be reliably made then it also becomes possible, by setting a threshold, to define the geographic extent of the influence of any set of urban centres in a consistent way. It could be supposed, for example, that whilst a residential settlement such as Ascot displays a geodemographic character which tends to occur only in the vicinity of a very high order centre, the geodemographic character of Erith is of a sort that occurs predominantly in mid to lower order centres. Thus whilst Erith, as an urban centre, may have a greater range of shops of other functions than Ascot and therefore have a higher central place rank than Ascot as a centre, its population is much less typical of a major global city than are those of Ascot, even though Erith lies much closer to the centre of London than Ascot does[7]. If a threshold is set to define residential neighbourhoods associated with places of a high central place rank, then we may find that this threshold defines both Erith and Ascot as being within the sphere of influence of Central London; alternatively we may identify that London's influence extends to a greater distance up the Thames Valley than down the Thames Estuary. Alternatively neither locality may be sufficiently high in terms of central rank to be viewed as 'metropolitan' in its character.

2 : Summary of methodology for attributing a Central Place rank score for each Mosaic type

In this section we describe a methodology that has been used to attribute central place rank scores to individual Mosaic types. How central place rank scores are calculated for specific geographical territories is addressed in the following section. Although the methodology itself is formal in its approach, the values of many of the parameters used in its implementation are necessarily subjective. For this reason we consider the discussion of the methodology to be more important than the precise manner of its implementation. There is much scope for varying many of the parameters in its implementation.

The first step involves the sourcing of a database containing a set of centres for which central place rank scores have already been calculated. In this project we have made use of a database created by Sir Peter Hall and others which uses the presence of a set of 20 distinct urban functions to evaluate and rank a set of 911[8] urban centres in England and Wales. These functions are listed in table one. This ranking is based on the presence of functions in defined centres in 1998. One of the principal purposes of the study was to example changing in central place rank over the period since 1913, when a previous study was undertaken. We are grateful to Sir Peter Hall for providing us with access to this database and for permission to use it for the purpose of this analysis.

Indicators collected by Peter Hall for each of 911 urban centres

Total Weekly Newspaper Score
AM Newspaper
PM Newspaper
Accountancy firms
Banks*
London train*
Rail station*
Number of hospitals
Hospital beds index
Medical School
University
College of further education
Theatre
Cinema
Television studio
Highest star hotel
Number of hotels
Football Index
Chamber of Commerce

 * for centres of rank 3c or higher only

Table one : Functions used in Peter Hall's study to define the central place rankings of English cities

The second step involves the sourcing of a database containing the spheres of influence of UK urban centres and the proportions of their population[9] resident in each of the 61 UK Mosaic types. In this project

we have made use of a set of definitions created by Experian for use in the consulting services which they provide to major UK retailers.

This dataset provides information on 1131 centres. The spheres of influence are defined in terms of combinations of a set of 9577 postcode sectors (eg N6 4).

The third step involves the matching of the urban centres supplied by Peter Hall with those supplied by Experian so as to generate a dataset containing both the central place rank of each centre and the geodemographic composition of its catchment area. This step involves the loss of a number of centres, for example all centres in Scotland and Northern Ireland (which are not covered in the Hall study), as well as centres in Inner London (which are consolidated by the Hall study to create 'Inner London'). A number of centres are lost because Experian's database does not provide information on many of the smaller centres included in the Hall database, whilst the Hall database does not provide information for a number of suburban shopping centres included in the Experian list. After de-duplication we can identify 623 centres for which information can be accessed from both data sources.

The fourth step involves the classification of these urban centres, based on their central place rank, into a limited set of six strata. The objective of this grouping is not to obtain equal numbers of centres in each stratum but to create strata that have equivalent influence as sets of urban centres. To achieve this we first created Location Quotients for each centre on 19 of the 20 'functions' measured in the Hall study[10]. We have then calculated for each centre its average Location Quotient across all 19 functions. Next the centres are ranked by their average Location Quotient. The average of the average Location Quotients across the 623 centres is therefore 1.00. Dividing 623 by six (104), we have therefore attempted to create strata such that the sum of the average Location Quotients of their centres is approximately equal to 104. Table two lists the centres contained in strata one and two.

Urban Centres, Strata one and two				
Urban Centre	Stratum	Average Location Quotient	Population within catchment	Radius of catchment area (m)
London	1	107.25	9,956,794	25
Birmingham	2	12.05	1,149,730	6
Manchester	2	10.75	968,349	6
Bristol	2	10.16	507,099	5
Leeds	2	9.34	530,418	5
Newcastle	2	8.84	478,276	5
Cardiff	2	8.48	504,134	5
Liverpool	2	7.81	334,991	5
Nottingham	2	7.75	626,101	5
Southampton	2	7.49	334,554	5
Sheffield	2	6.57	474,985	5

Table two : Urban centres in strata one and two

The fifth step involves the calculation of the overall Mosaic profile of each the six strata. For the first stratum, London, we have calculated the proportion of the population by Mosaic type for all postcode sectors with a centroid within a radius of 25 miles from central London. This reason why the radius was set at 25 miles was that this distance provides a population total which, as a proportion of the England and Wales total, was approximately equal to the value of London's average Location Quotient, expressed as an

average of that of all centres. In other words if, according to the Hall database, London contains one sixth of England and Wales hotels, football clubs, banks, television studios, etc, then it is not unreasonable to suppose that its effective sphere of influence is one sixth of England and Wales population. A similar approach was used to the definition of the residential sphere of influence of centres in stratum two. Birmingham and Manchester were given radii of 6 miles, Bristol, Cardiff, Leeds, Liverpool, Newcastle, Nottingham, Sheffield and Southampton 5 so as to generate population totals broadly commensurate with their central place rank. The sum of the populations of these catchments, as a proportion of the England and Wales total, again approximately matches the share of their hotels, football clubs, banks, television studios etc. For the remaining strata we have used the catchment area definitions supplied by Experian. For these strata we have simply taken the average proportion of the population of their centres by Mosaic type, not weighting for the population size of each catchment[11].

The sixth step involves comparison of the population frequency by Mosaic for each of these strata with the corresponding population frequency by Mosaic of England and Wales as a whole, thereby creating a set of concentration ratios for each Mosaic type for each stratum The step generates an output file which shows, for each of the 61 types of neighbourhood, the extent to which they are over- or under- represented in each of the strata. For example if 24% of all England and Wales residents in the Mosaic type 'Sprawling Subtopia' live in stratum one (the set of postcode sectors within 25 miles of central London) and if this

Concentration ratios for each Mosaic type on each stratum								
		Concentration ratios						
11 Mosaic Groups	61 Mosaic types	**strata**						
		6	**5**	**4**	**3**	**2**	**1 + 2**	**1**
A : Symbols of Success	A01 Global Connections	1	14	5	6	15	*326*	**512**
	A02 Cultural Leadership	9	65	46	45	93	*272*	**378**
	A03 Corporate Chieftains	53	128	102	40	51	*184*	**262**
	A04 Golden Empty Nesters	112	145	100	90	52	*72*	84
	A05 Provincial Privilege	69	124	89	101	120	*121*	122
	A06 High Technologists	102	135	119	92	44	*55*	61
	A07 Semi-Rural Seclusion	142	142	98	105	24	*57*	76
B : Happy Families	B08 Just Moving In	98	95	101	96	98	*98*	98
	B09 Fledgling Nurseries	93	114	120	111	49	*48*	48
	B10 Upscale New Owners	106	117	137	93	40	*26*	18
	B11 Families Making Good	118	119	116	117	52	*50*	49
	B12 Middle Rung Families	93	108	120	101	75	*65*	59
	B13 Burdened Optimists	105	120	117	116	66	*56*	50
	B14 In Military Quarters	**234**	181	71	121	5	*22*	32
C : Suburban Comfort	C15 Close to Retirement	96	115	118	101	63	*65*	66
	C16 Conservative Values	99	99	131	126	76	*45*	26
	C17 Small Time Business	180	136	119	118	22	*15*	11
	C18 Sprawling Subtopia	56	97	94	107	155	*132*	118
	C19 Original Suburbs	40	94	75	69	116	*201*	**252**
	C20 Asian Enterprise	3	49	53	72	88	*267*	**374**
D : Ties of Community	D21 Respectable Rows	73	104	92	113	133	*119*	111
	D22 Affluent Blue Collar	120	91	124	105	92	*38*	7
	D23 Industrial Grit	122	96	126	112	104	*43*	7
	D24 Coronation Street	76	81	134	114	177	*67*	2
	D25 Town Centre Refuge	183	163	147	107	28	*14*	6

	D26 South Asian Industry	17	33	100	122	**291**	*159*	81
	D27 Settled Minorities	1	25	35	12	53	*320*	**478**
E : Urban Intelligence	E28 Counter Cultural Mix	0	5	13	6	17	*327*	**512**
	E29 City Adventurers	1	28	24	62	70	*293*	**426**
	E30 New Urban Colonists	8	64	52	41	52	*284*	**421**
	E31 Caring Professionals	13	47	76	**260**	**283**	*129*	37
	E32 Dinky Developments	40	118	117	91	89	*154*	193
	E33 Town Gown Transition	10	39	50	**216**	**415**	*172*	28
	E34 University Challenge	11	50	56	165	**440**	*191*	44
F : Welfare Borderline	F35 Bedsit Beneficiaries	7	56	70	**235**	**256**	*132*	59
	F36 Metro Multiculture	0	7	6	3	14	*329*	**516**
	F37 Upper Floor Families	46	73	91	122	**279**	*133*	46
	F38 Tower Block Living	17	33	64	100	**416**	*212*	91
	F39 Dignified Dependency	42	57	86	115	**294**	*143*	53
	F40 Sharing a Staircase	17	16	21	100	**409**	*246*	150
G : Municipal Dependency	G41 Families on Benefits	62	77	111	140	177	*96*	48
	G42 Low Horizons	75	61	108	90	**240**	*93*	5
	G43 Ex-industrial Legacy	93	65	108	91	**209**	*81*	5
H : Blue Collar Enterprise	H44 Rustbelt Resilience	139	79	120	88	90	*35*	3
	H45 Older Right to Buy	135	97	112	101	111	*50*	14
	H46 White Van Culture	69	128	84	78	90	*153*	191
	H47 New Town Materialism	93	112	121	108	103	*63*	40
I : Subsisting Elders	I48 Old People in Flats	80	92	113	102	189	*98*	44
	I49 Low Income Elderly	102	113	96	103	121	*97*	82
	I50 Cared for Pensioners	109	101	115	97	114	*76*	54
J : Grey Perspectives	J51 Sepia Memories	131	146	107	115	65	*75*	80
	J52 Childfree Serenity	60	110	81	108	107	*153*	180
	J53 High Spending Elders	**208**	152	113	153	26	*24*	23
	J54 Bungalow Retirement	199	129	144	124	35	*20*	12
	J55 Small Town Seniors	**202**	140	111	109	52	*30*	18
	J56 Tourist Attendants	**524**	119	130	89	0	*0*	0
K : Rural Isolation	K57 Summer Playgrounds	**555**	125	43	82	0	*1*	1
	K58 Greenbelt Guardians	**223**	156	104	95	4	*16*	23
	K59 Parochial Villagers	**292**	171	90	113	1	*2*	3
	K60 Pastoral Symphony	**324**	169	73	120	4	*2*	0
	K61 Upland Hill Farmers	**337**	167	34	142	0	*0*	0

Table three : Concentration ratios for each Mosaic type in each stratum.

stratum accounts for 16% of all residents of England and Wales, then the concentration ratio would be 150 (24% divided by 16% multiplied by 100). Table three shows the concentration ratios for each if the six strata (as well as for strata 1 + 2 combined) for each of the 61 Mosaic types. The higher the value in the cell the greater the tendency for that Mosaic type to occur in urban centres in that range within the central place hierarchy.

3 : Methodology for attributing a Central Place score to a geographical area

At this stage we have created a database giving for each of the 61 Mosaic types a set of concentration ratios according to the extent to which they are over or under represented in each of the six strata.

In addition we decided to create an additional value which would indicate the concentration ratio for strata one and two combined. This additional value is simply the average of the concentration ratios for the two strata, weighted by population size of each stratum's catchment area(s).

It would of course be quite possible to create an overall composite central place rank score, summarising the concentration ratio of each Mosaic type across all six strata. This could be done by multiplying the concentration ratio for the Mosaic type in stratum one by one; multiplying the concentration ratio for the Mosaic type in stratum two by two; multiplying the concentration ratio for the Mosaic type in stratum three by three and so forth; and adding the results. This would make it possible to score and rank order the individual Mosaic types according to their spread across all six strata.

Taking the combined concentration ratio for strata one and two for each Mosaic type we now examine a database, supplied by Experian, which contains the percentage of population in each of the 9577 UK postcode sectors resident in each of the 61 Mosaic types.

Taking each postcode sector one at a time we multiply the proportion of its population in each Mosaic type by the corresponding concentration ratio for that type or strata one and two combined. We sum the results. In this way we produce a score for each postcode sector, the higher this being, the greater the extent to which its constituent Mosaic types are associated with urban centres belonging to strata one and two. If we were to label centres in strata one and two as 'Metropolitan', these values would then show the extent to which each postcode sector has a population structure which is 'Metropolitan'. The higher the values the more likely the postcode sector is to have the types of neighbourhood which lie within 25 miles of London or within five or six miles of the top ten centres in England and Wales outside it.

There are a few features of these values that are worth noting. One of these is that values can be assigned not just to postcode sectors in England and Wales but also to postcode sectors in Scotland and Northern Ireland. Thus the most 'metropolitan' Mosaic type is 'Metro Multiculture', closely followed by 'Counter Cultural Mix' and 'Global Connectionss'. Although predominantly located in London 'Global Connections' does occur in significant amounts in central Edinburgh. A central Edinburgh postcode sector made up exclusively of 'Global Connections' postcodes would therefore be attributed an extremely high value on the variable 'Metropolitan'.

A second feature is that the calculation of the 'Metropolitan' value does not take into account the location of the postcode sector. Two postcode sectors may have identical percentages of their population in each of the 61 Mosaic types. One sector may lie 24 miles from Central London, the other 26 miles from Central London. The two postcode sectors will be given an identical value on the 'Metropolitan' variables. Indeed many postcode sectors outside London and the top regional centres have a higher 'Metropolitan' score than postcode sectors inside the defined catchments. For example the average values on the 'Metropolitan' score of the three postcode sectors belonging to Erith (DA8 1, DA8 2 and DA8 3) are 113 whilst the average values of the three postcode sectors belonging to Ascot (SL5 7, SL5 8 and SL5 9) are 151. This is despite the road Erith being significantly closer to Charing Cross (central London), at 16.9 miles road distance, than Ascot, 29.0 miles.

Clearly the methodology for attributing 'Metropolitan' or other values to areas can make use of any level of geography for which distributions of population by Mosaic can be produced. It would be possible to produce rankings for wards, for local government areas or for parliamentary constituencies. Indeed it is possible to produce scores and rankings for the catchment areas of urban centres. In this way we could, if we wanted, re-evaluate each of the 1132 centres on the Experian database and attribute to them an average value on the 'Metropolitan' variable by calculating the population weighted average of their constituent

postcode sectors. Such an exercise would almost certainly give Ascot a higher score (and rank order) than that which it currently achieves by reference solely to the 20 indicators collected in the Hall study.

One of the problems with the methodology is that centres at the lower end of the urban hierarchy include both small market towns, such as Diss and Bala serving a rural catchment, and suburban centres whose relatively low position on the hierarchy reflects their proximity to higher order centres in whose shadow they fall. To the extent that lower order centres within metropolitan centres are included within strata five and six the concentration ratios for these strata for the Mosaic type will be distorted, including a much higher proportion of people associated with higher order strata that ought really to be the case.

To address this problem we scored all 623 centres used in this analysis to see whether it was possible to identify suburban centres which ought to be excluded from the analysis. Our definition of suburban centres was ones which, according to Hall's data, had a low position in the urban hierarchy (an average location quotient on the 19 functions of 1.00 or less) and the demographics of whose catchments, according to the methodology described above, had average concentration ratios in excess of 100 on strata one and two. This resulted in the identification of 93 centres which were subsequently removed from the analysis. Examples of such centres are Leigh on Sea, which could be viewed as a suburban satellite of Southend on Sea, Penarth, a satellite of Cardiff, Henley on Thames, a satellite of Reading and Romford, a satellite of Central London. Table four lists the top 19 of these centres ranked by the extent to which the

Top 19 urban centres defined as 'Suburban'		
	Central place score of:	
	Urban	
Urban Centre	centre	Catchment
(Average of 622 centres)	1.00	100
Tottenham	0.82	317.0
Acton	0.41	306.1
Wood Green	0.24	304.6
Leytonstone	0.46	299.3
Wembley	0.43	291.0
Ealing	0.78	282.7
Southall	0.10	278.4
Richmond (Surrey)	0.85	266.0
East Ham	0.36	263.6
Walthamstow	0.56	262.7
Beckenham	0.18	262.5
Teddington	0.03	259.9
Surbiton	0.53	248.5
Edgware	0.33	246.1
Greenford	0.08	242.0
Twickenham	0.47	240.9
Hounslow	0.69	226.6
Morden	0.14	203.4
Ilford	0.84	200.2

Table four : Urban Centres of below average rank surrounded by highly urban catchments

demographics of their catchment areas display metropolitan characteristics. It is evident that all of these centres are close to the boundary between inner and outer London. Had the list been extended to include all 93 centres it would be evident it is not just suburban London centres that are captured by this definition.

Once these centres were removed from the analysis 530 centres remained. We then recalculated the Location Quotients on the 19 indicators used in the study, re-ranked the 530 centres, recalculated the membership of the six strata and re-calibrated the concentration ratios of each stratum for each of the 61 Mosaic types. Table five shows key statistics for each stratum.

The six strata : key statistics							
	Lowest rank				Highest rank		
Stratum	6	5	4	3	2	1	All
Number of centres	368	83	46	22	10	1	530
Average Location Quotient of centre	0.23	1	1.82	3.76	8.92	107.25	1
Sum of Location Quotients	84.06	82.97	83.84	82.82	89.24	107.25	530
Average Central Place score based on:							
Stratum 1	74	85	100	111	162	780	100
Strata 1 and 2	54	77	78	81	108	209	100

Table five : Key statistics for the six strata

4 : Mapping Central Place surfaces

With values attributed to each postcode sector it now becomes possible to examine the areas around major centres and identify variations in the level of 'Metropolitan'ness of their surrounding residential areas.

Whilst in general the degree of 'Metropolitan'ness declines the further we travel from London or from the centre of a major provincial centre, the gradient of this decline is not necessarily consistent and often reflects the manner in which the growth of the provincial centre has led to the inclusion of communities whose formation and existence predates the suburbanisation of a larger neighbour. This is particularly
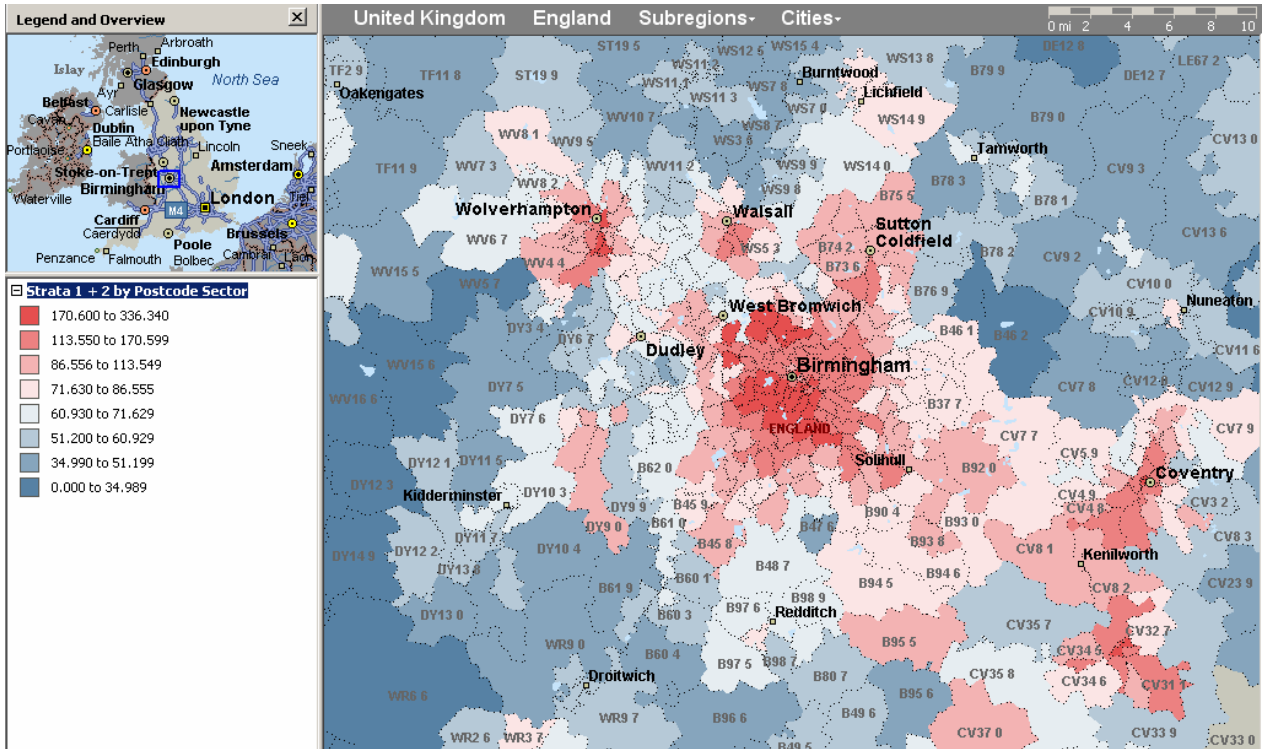
Figure one : Central place scores, Birmingham, strata 1 + 2 (Metropolitan)

evident in Birmingham (see figure one), whose eastern suburbs have a much more Metropolitan flavour than traditional manufacturing towns in the Black Country, many of which are much closer in distance, if not in cultural affinity, to the centre of Birmingham. Likewise it is evident that Manchester's southern suburbs, whether Didsbury, Cheadle, Hale or even Wilmslow, owe their demographic character to their proximity to Manchester to a much greater degree that traditional industrial towns to the east of Manchester such as Failsworth, Oldham, Stalybridge and Hyde (figure two).
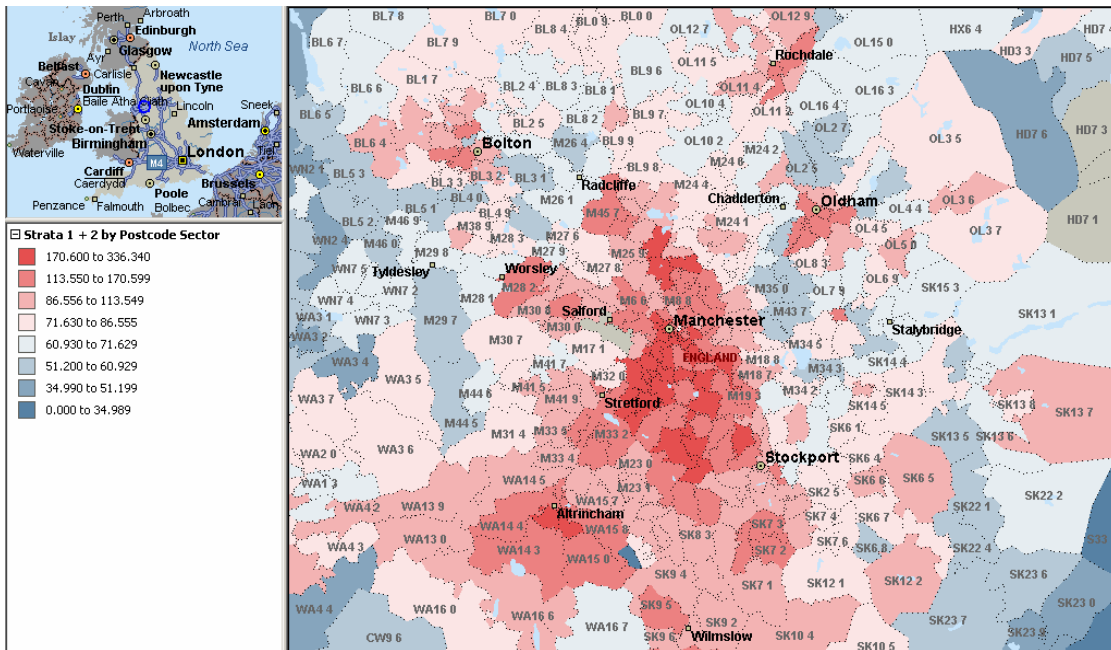
Figure two : Central place scores, Manchester, strata 1 + 2 (Metropolitan)

Though equally close to central Manchester, such places continue to exhibit the feel of small town Britain and, with the exception of economic migrants, tend not to attract residents the types of people who move to Manchester from other parts of the country. Likewise the influence of Leeds is stronger towards the North and East than it is to the South West and London's Metropolitan influence tends to be stronger to the West than it does to the East (figure three).

Whilst it may be instructive to map the degree of 'Metropolitan'ness within metropolitan regions, it can also be interesting to represent the variable nationally, showing, in this case, those parts of the country which are largely unaffected by metropolitan characteristics from those that are (figure four). The national map highlights quite small towns, such as Durham, St Andrews and Aberystwyth, which on account of their extensive populations in the Mosaic type 'University Challenge', have a much more Metropolitan feel about them than would be supposed simply on the basis of their population size.

Another interesting exercise is to map only those postcode sectors which have a higher than national average score on the 'Metropolitan'ness characteristic (figure five). This map provides an interesting opportunity to obtain a consistent demarcation of the outer boundary of all urban centres.
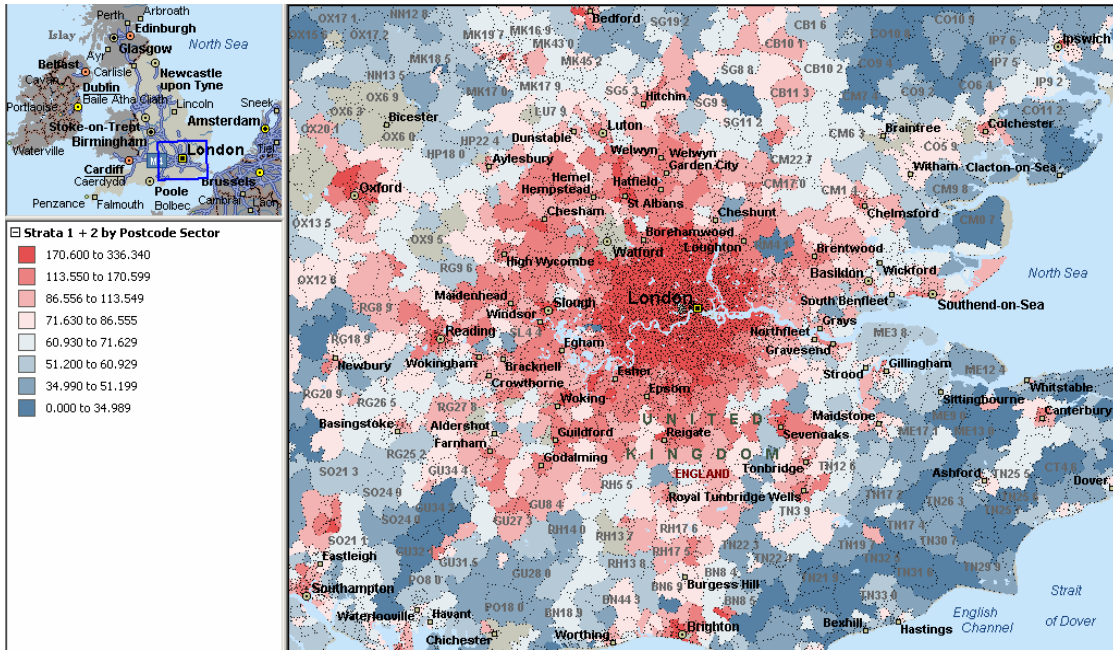
Figure three : Central place scores, London, strata 1 + 2 (Metropolitan)
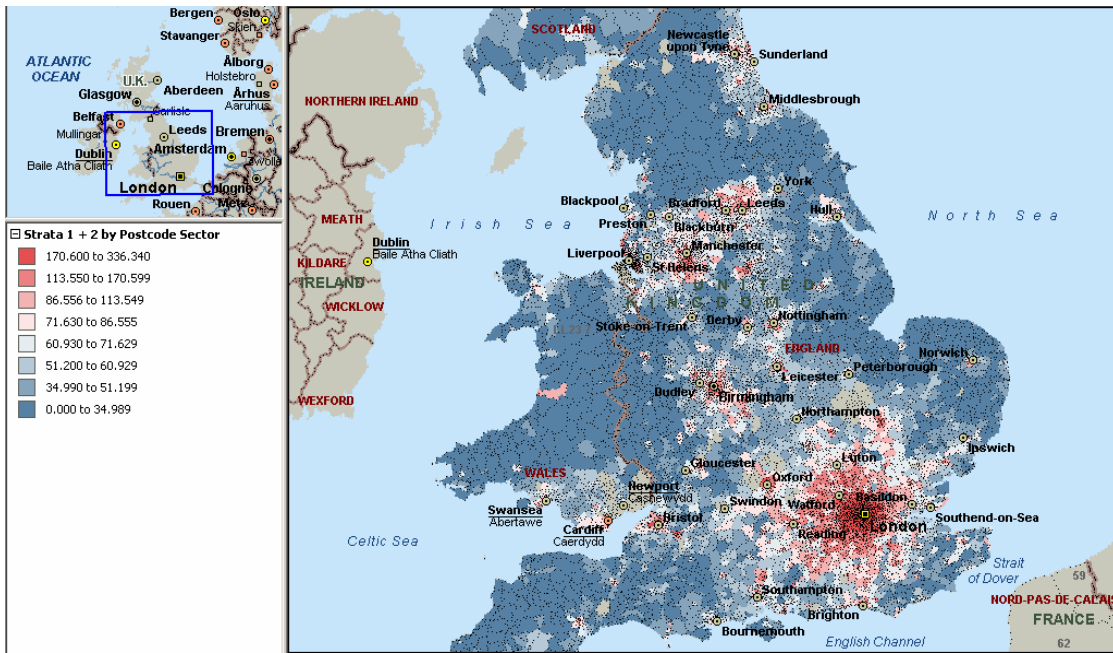

Figure four : Central place scores, England and Wales, strata 1 + 2 (Metropolitan)

Figure five : Central place scores, Northern England, strata 1 + 2 (Metropolitan) : above and below the national average

5 : The relevance of Central Place ratings of areas to social research

Much has been made of the extent to which post industrial societies are organised around global networks of communications and innovation. Whilst such observations are undoubtedly true such networks are more intrusive in major metropolitan centres such as London and Paris than they are at the lowest level in the urban hierarchy such as Downham Market or Wem. Indeed within major metropolitan centres they are probably more visible in locations such as Hampstead or Montmartre than in Becontree or Sarcelles. Some geographical definition of the spatial territory over which these networks and communications operate would very helpful in enabling them to be used to interpret on the ground phenomena. of the geographic distribution of such phenomena would seem to be appropriate.

One would suppose that it would be equally valuable to be able to formulate the geographical distribution of concepts such as the metropolitan 'habitus'.

In Britain such representation is made more difficult as a result of post war trends such as the designation of green belts and of the growth of ex-urban residential communities which can result in the emergence of a metropolitan habitus in settings which in environmental terms appear rural. Physical form and population density become ever less predictive of the urban hierarchy, with high density urban architecture in a settlement such as the Rhondda, which now ranks very low on any central place ranking, contrasting with low density, semi rural sprawl characteristic of a settlement such as Beaconsfield, which is of a sort that is found only within close proximity to a major urban centre.

Political divisions, which in the 1950s reflected differences in occupational structure and household income, by the year 2000 are much more closely aligned in the US as well as the UK with metropolitan versus small town mind sets , as is evidenced by the map of the US state taken by the Republicans in 2004. All Mosaic types with a high position on the central place ranking have a much higher proportion of respondents planning to support Labour than would be expected on the basis of their average household income or mix of occupations and, in the last three elections as a whole, bwer swings to Labour are associated with Mosaic types which appear in centres low in the urban hierarchy.

Surveys such as the British Crime Survey also show that likelihood of victimisation is higher, after controlling for occupational mix, in all Mosaic types which have a high concentration ratio among strata one and two in the foregoing analysis. Coding and analysing survey respondents by the metropolitan-ness of the postcode sector they live in may therefore be more appropriate than coding and analysing using classification systems based on urban, suburban and rural classifications.

Differences between city, small town and rural environment environments are evident in large proportions of the geodemographic profiles which are undertaken using survey databases as well as operational records and apply in virtually all fields of analysis .

Appendix one : 'Global Connections'

The following text described the Mosaic type 'Global Connections', the type of neighbourhood with the highest position on the central place rankings. The text is taken from the Mosaic multimedia guide published by Experian. This text was prepared before the statistical relationship between neighbourhood types and central place rankings was established.

Mosaic Group **:   A : Symbols of Success**

Mosaic Type **:   A1 : Global Connections**

Summary :
     Global Connections contains extremely expensive housing, mostly in central London, occupied by rich people from abroad and by childless older people on extremely high incomes.

Demography :

This segment contains many very wealthy people who, for one reason of another, want to live as close as possible to the centre of a global city. Many of them are wealthy foreigners who find it convenient to have a London pied a terre, others are managers with international corporations on temporary assignment to the United Kingdom. Some are very wealthy British people who enjoy proximity to the variety of restaurants and entertainment opportunities available in London's West End. Some are people involved in the cultural agenda of the nation whose working lifestyles make a central London residence a necessity. An increasing proportion of the population are older divorcees who have exchanged expensive suburban houses for smaller central London flats. The consistent feature of most of these people is that they have access to serious amounts of money and that they do not need to cater for the needs of children. Mixed in among this wealthy elite is a scattering of lower income people, the porters and cleaners who service their apartments, and some well off younger singles supported by rich parents. Despite the young profile of the population this is an inner city community which continues to support a significant population of well off older people, most of whom lease purpose built apartments in prestige blocks. The ambience is particularly international. News stands sell foreign editions of papers from around the globe to large resident populations of Arabs, Americans and people from other Western European countries, many of whom live in their own favoured enclaves, often as a result of the location of ex-patriate schools. Whereas these neighbourhoods contain significant Jewish communities there are fewer members of more recently arrived ethnic minority groups than in other parts of London. Despite their high incomes the majority of the population are content to live in rented flats. They work locally in commercial rather than in the public sector occupations and in service industries, particularly in banking and in commerce, rather than in manufacturing. Many directors of large companies live in these areas which provide convenient access to corporate headquarters but there is also a significant number of people who are self employed. The prestige nature of these locations leads to a perverse position on indicators of social deprivation commonly used by government. Not only are these areas ones where comparatively few people own a car – people use taxis instead – but levels of household overcrowding and of shared access to bathrooms and toilets is also well above the national average – reflecting the minority population of affluent young couples sharing studio apartments.

Environment :

Neighbourhoods of Global Connections are commonest in central London locations, such as Kensington and Chelsea, Notting Hill, St Johns Wood and Hampstead, which were favoured by the Georgian and Victorian merchant classes. Typically they take the form of mid rise apartment blocks that are more common in continental European cities than in Britain where a guarded entrance hallway with plants and comfortable chairs gives way to lifts which take the wealthiest to penthouses and those of more modest means to second to fourth floor flats. Most of the accommodation is in older properties some of which are purpose built, and sold originally on long term leases by large estate owners, but much also in prestigious old houses, many with basements for their original owners' servants and steps leading up to an impressive entrance. These have been tastefully converted into small studios whose owners are contacted through a battery of separate doorbells and entry phones. In the more central locations apartments will be set directly off the street, elsewhere set back behind the iron railings that protect the basement. Some will surround small parks to which owners have communal access. In each case the apartments will be arranged to give the appearance of a terraced street. In areas further from the centre of London some of these flats will stand in their own grounds and in there are occasions, of which Notting Hill and West Hampstead are good examples, where the neighbourhood will take the form of high density two storey terraced houses shared by high earning singles. These residential areas quickly give way to major arterial thoroughfares on whose busy pavements smart restaurants jostle with designer clothes shops, sellers of expensive kitchens and other home improvement services, antique shops and the ubiquitous foreign news stands. These are areas in which it does not take long to find a taxi and in which buses and tubes deliver access to the West End in fewer than thirty minutes.

Economy :

Neighbourhoods of this sort are highly dependent on the global economy and are affected more by fluctuations in financial share prices than by changes in the level of mortgage interest rates. As secure havens and pied a terres for international jet sets, they can also be affected by changes in the currency's exchange rate and by incidents of international terrorism.

Consumer Values :

Global Connections places part icularly high value on personalisation. These are individuals who demand to be treated as such, whether in restaurants where their tables will be booked and where they will be greeted by name, in the banks who will enrol them in sections responsible for personal banking and on airlines where they will be pampered in first class seats. Clothes will be personally tailored rather than bought off the peg. Whilst premium and designer brands are important to these people, many of their products will be custom made to personal specifications. Successful brands in such neighbourhoods are ones which adopt an international as well as an exclusive position in their market.

Consumption Patterns :

Global Connections, on account of its extreme wealth and busy lifestyle, 'outsources' many consumer activities which it would not occur to most people not to do themselves. People eat at restaurants rather than cook at home, are driven in the back of taxis when others would drive themselves, cleaners come to clean their homes and specialist launderers maintain their clothes. These are not people whose finger nails get dirty in the garden or whose closets contain worn out garments reserved for the occasional home improvement project. Much money is spent on interior decoration and refurbishment, on eating out and on foreign travel. These people also spend highly on theatres and the arts. Despite the congestion of surrounding streets these are good locations to see top of the range cars, particularly custom sports designs. Harrods is an important institution for many of these people.

Change :

This type of neighbourhood has grown rapidly in recent years, resulting in the colonisation of newly fashionable areas such as Notting Hill. London's growing role as a global city, not just as a national capital, will make these areas even more prestigious in future years, subject to the good health of the international business system.

A01 : Symbols of Success / Global Connections

Belsize Park Gardens, Hampstead, NW3 4LH

Rothesay Terrace, Edinburgh, EH3 7RY

Great Pulteney Street, Bath, BA2 4BU

Pelham Street, South Kensington, SW7 2NP

Figure six : Examples of types of neighbourhood of the type 'Global Connections'

Appendix two : 'Pastoral Symphony'

The following text, which is also taken from the Experian multimedia guide, describes 'Pastoral Symphony', one of two types of neighbourhood with a zero ranking on the metropolitan scale of central place ranking**.**

Mosaic Type :   **K60 : Pastoral Symphony**

Summary :
  Pastoral Symphony contain populations of scattered farmers most of whom are owner managers of medium sized operations with a bias towards dairying rather than cereals or intensive agribusiness.

Demography :
  This segment contains areas of lowland Britain which are populated by a countryside of scattered farms and cottages rather than large nuclear villages. In comparison with areas of Parochial Villagers land is less likely to have been consolidated into a small number of large estates owned by wealthy families – most farmers either manage their own farms themselves with the help of their family or employ just one or two workers to help them out. Though many farms continue to be handed down from generation to generation, these areas are subject to land consolidation and many redundant farms and farm cottages now provide rural retreats for retired people, weekenders or urban commuters. A key feature of these areas therefore is that farmers have high equity in their land and in their businesses but that this equity often provides an unpredictable financial return and is very difficult to release in the form of disposable income. Many farmers plough back profits into their farms in the hope of selling them once they retire and these areas are populated by many smart bungalows financed by the sales of these farms once their owners retire. The population age distribution of these areas, as is common throughout the countryside, is now skewed towards older working age groups and retired people. Young people have had to move to towns to obtain technical qualifications and have little incentive to return to these rural settlements unless to work on family farms. There are is little modern housing of a sort that would attract young people. However the varied scenery and undulating countryside attracts many older people who are prepared to cope with the solitude of living beyond the support systems provided by more traditional villages. In these areas distant from major centres of population commuters are more likely to work in shops and public sector jobs in local market towns than to enjoy well paid jobs in the offices of major corporations.

Environment :
  Pastoral Symphony include large populations of country dwellers in rural Wales along the Welsh borders and on both sides of the Scottish border. These are areas which are very remote from centres of population and where the economy is almost entirely dependent on agriculture. Scattered farms are reached along private roads leading off winding single track country lanes often lined by steep banks and thick hedges. Large but often unimproved farmhouses sit amid a complex of barns and silos and old buildings protect tractors and other farm equipment. These are typically landscapes of green fields and orchards, with grazing sheep and cows protected by fields separated by barbed wire fences and by coppiced hedgerows. Though these are seldom in mountain areas, these are often areas of poorer soils where water runs off into small streams and where significantly amounts of steeper land are forested. The network of support services which in lowland areas are provided from within nucleated villages are in these regions provided by informal networks of local entrepreneurs many of them also living in isolated farms and cottages. By comparison recognisable villages with churches and pubs are relative few and far apart. Much more of the support in these areas is provided by local market towns and the weekly visit to markets and to suppliers of agricultural services provides important intelligence in what are otherwise very fragmented and isolated communities.

Economy :
  Neighbourhoods of Pastoral Symphony are highly dependent upon farming for employment and their financial health is greatly affected by decisions made by governments regarding the way in which agriculture is financially supported. Declining farm incomes in these areas have encouraged many to diversify into more specialised, higher value food products, such as organic cheese, which appeal increasingly to more sophisticated urban consumers. A number are also experimenting with agro-tourism and with diversification into recreational land uses.

Consumer Values :

Pastoral Symphony contain people who greatly value the quietness and solitude of living in physical isolation from their neighbours and who tend not to feel disadvantaged by their lack of access to the range of leisure opportunities taken for granted to urban residents. Many, though happy to welcome urban visitors, consciously look down on urban cultures which they see as imposing rigid disciplines and unwanted complexity on their residents. The culture of self reliance is a particularly important value in these areas which subscribe strongly to the belief that 'small is beautiful', one reason why many Liberal Democrat Members of Parliament represent these areas. Where consumers do engage in the formal economy it is primarily to source basic necessities.

Consumption Patterns :

Pastoral Symphony typically spend large amounts on money on products and services, such as motoring and financial services, where it is difficult to distinguish between consumer and business use. Due to the scattered population, a high proportion of income is spent on cars and on motoring expenses and cars tend to be kept for particularly long periods of time. These are important markets for loans, many of which will be secured against land and buildings. People work particularly long hours in these neighbourhoods and spend little on leisure, although a minority will enjoy foreign travel particularly during winter months. Being beyond the reach of mains gas these are good markets for bottled gas and for home heating fuels and large kitchens tend to be well equipped. Self standing freezers sell particularly well in these areas. Tastes in clothing and in food are traditional and many residents buy in bulk ad visit discount stores and car boot sales. The collection of antiques is a particularly popular bobby among this population.

Change :

In recent years the decline in the population of many of these remoter areas of the country has been arrested, if not reversed, but much of the growth in population numbers is occurring on the edge of the small market towns rather than in these areas of scattered farms. The growth of the internet is now playing a major role in moderating isolation and in making them feasible locations for footloose knowledge workers.

K60 : Rural Isolation / Pastoral Symphony

Wern Ddu, Tyn y Groes, Conwy, LL32 8SS

Lumburn, Tavistock, PL19 8HT

Melmerby, Penrith, CA10 1HF

Dalemoor Farm, Dale, Ilkeston, DE7 4PH

Figure seven : Examples of neighbourhoods of the type 'Pastoral Symphony'

[1] 'The Changing Urban Hierarchy in England and Wales', Hall P., Marshall S. and Low M, Regional Studies, Vol 35, pp 775-807, 2001

[2] 'Designing Geodemographic Classifications to meet Contemporary Business Needs', Webber R., Journal of Interactive Marketing, Vol 5, Number 3, January/March 2004

[3] 'Neighbourhood Inequalities in the Patterns of Hospital Admissions and their Application to the Targeting of Health Promotion Campaigns', CASA working paper, December 2004

[4] A full description of the UK Mosaic types can be found on the website of Experian Business Strategies http://www.business-strategies.co.uk/Content.asp?ArticleID=566 ,

[5] Nevertheless it should be pointed out that four of the 400 measures used by UK Mosaic to calculate the measure accessibility to population and to retail centres.

[6] Whilst it is traditional to assign *urban centres* a value indicating their rank order position, it makes more sense to assign *areas* values on a continuous distribution

[7] A subtle distinction needs to be made between the characteristics of individuals and of neighbourhoods. This paper is predicated on the assumption that higher order centres can not be distinguished from lower order centres in terms of their population mix but that they can be distinguished in terms of their mix of types of neighbourhoods. The distinction is the result of the way population groups segregate themselves residentially within the catchment area of the urban centre

[8] The Hall study provides information for a number of additional sub centres, for instance for Brighton and Hove separately as well as for Brighton and Hove as a single entity. In this study we have not made use of the information for sub centres, only for the consolidated centres, of which Inner London is an important one.

[9] Experian's population counts take the form of mid year estimates for 2003.

[10] The indicator not used was 'Bank of England Agency' because of the very small number of occurrences.

[11] Subsequently a number of suburban centres were removed from the analysis. The criterion for selecting these centres is explained later in the text.