

Working Paper 90.

NOTES ON THE DEFINITION OF  
WEST YORKSHIRE STUDY AREA AND  
THE NEW WEST YORKSHIRE METROPOLITAN  
COUNTY

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## Introduction.

The West Yorkshire Study Area comprises fifty one local authority areas in the West Riding of Yorkshire. These cluster around (and include) the county boroughs of Bradford, Dewsbury, Halifax, Huddersfield, Leeds and Wakefield. Much of the research programme in Urban and Regional analysis that has been (since 1970) and is undertaken in the Department of Geography at the University of Leeds, is based on this area. This focusing of interest was maintained "In order to encourage a certain amount of integration and co-ordination, but an amount which is consistent with the freedom within the University for most individuals to pursue their own ideas". Wilson (1974,p.2). On the 1st of April, 1974, however, the long considered local government reorganisation of England was finally implemented, and a whole set of new local government areas was defined. The boundaries of the West Yorkshire Study Area as used in the Leeds University Geography Department coincide fairly well with those of the new West Yorkshire Metropolitan County and the purpose of this paper is to examine this relationship (section 3). Initially, however, (in section 2) a statement of the reasons for the initial adoption of the Study Area definition will be made.

## 2. The West Yorkshire Study Area.

### 2.1. General Remarks

There are a number of different possible approaches to defining a study area. One approach would be to investigate in detail whether an optimum regional delimitation could be made using the now well known tools of multi-factor formal or functional regionalization. (Berry and Wrbel, 1968; Brown and Holmes 1971). The most relevant variable to use would probably be journey-to-work flows.

Or alternatively, a cruder approach might be adopted of looking at previous regional definitions of West Yorkshire and of picking the regional boundaries that appeared to be most commonly agreed upon. This 'delphic' approach (consultation of authorities), was the one that was

adopted here, with recourse to journey-to-work statistics where the 'oracles' were in disagreement. This approach worked in this case because there was a large measure of agreement among the different definitions. All uses of the study area have included external or 'rest of the world' zones. Inclusion of such zones minimize the penalties of making a sub-optimum delimitation of a study area.

## 2.2. Previous definitions

The previous definitions that were considered are mapped in Figure I. These are as follows.

- (1). The West Yorkshire Conurbation. This is a discontinuous area of urban and semi-urban landscape, bounded on all sides by a zone of relatively weak urban character. It is defined basically as a uniform region, in which connection to exogenous area via interaction has been largely ignored.
- (2). The West Yorkshire Sub-region of the Yorkshire and Humberside Economic Planning Region. (set up in 1965). It includes the whole of the West Yorkshire Conurbation, several peripheral local authorities and the whole of the north western sector of the remainder of the West Riding Administrative county.
- (3). The Unitary areas of Leeds, Bradford, Halifax, Huddersfield and mid-Yorkshire proposed in the report of the Redcliffe Maud Committee (1969) This used parish boundaries to divide the large rural districts to the East and North of the conurbation that it was thought, could otherwise not be realistically included or excluded.
- (4). Seniors Minority Report from the Redcliffe Maud report.. The main difference to the Maud report was that the eastward extension of the Leeds Unitary area was curtailed by Senior.
- (5). The West Yorkshire Transportation Study Area. The previous definitions tend to extend the conurbation to the North, including the rural districts of Skipton and Bowland and beyond. The transportation





Study shifts the emphasis to an East-West direction, extending the large northern rural districts, but extending eastwards as far as the York and East Riding boundaries. Again, (with one exception) the boundary is based on local authority boundaries.

(6). The 'Brown and Holmes' definition (1971) This paper used functional distance indices to define West Yorkshire. These are indices based on a matrix of journey to work flows amongst areas, and the indices measure indirect connections as well as direct ones. The area is extended to include Ripon, Selby U.D., Hemsworth U.D. and Barnoldswick at its extremities, but no definitions of the intervening boundary is provided.

### 2.3. The Working Definition of the West Yorkshire Study Area

For our purposes the existing definition most akin to our desired study area is that of the West Yorkshire Transportation Study (W.Y.T.S.). It is thought that the large rural districts to the north have too little in common and too few connections with the predominantly urban conurbation to be included. As far as the southern boundary is concerned, there seems to be general agreement on its position, running along the southern edge of Holmfirth U.D., Derby Dale U.D. and Wakefield R.D. From there the Maud report boundary runs eastwards to include Hemsworth R.D. within the Unitary Area but Hemsworth is not included by either the W.Y.T.S. region or the economic sub-region. It is felt that this area probably has more in common with the Barnsley region and for this reason it is not included in the major study area. The eastern boundary of our study area is drawn to include the rural districts of Osgoldcross, Tadcaster and Wetherby, but unlike the W.Y.T.S. region it does not include Selby. To the west the West Yorkshire Study area extends as far as the County boundary with two possible exceptions, Saddleworth U.D. and Todmorden M.B. The latter is included in the W.Y.T.S. region, the Maud Report Yorkshire Province, and the West Yorkshire economic sub-region. However, Saddleworth is excluded by the Maud Report area. The doubt involved in these two local authority areas arises from their spatial linkages with urban centres in Lancashire. A decision has been based on journey to work data taken from the work-

place tables of the 1961 Population Census. The data are set out in Table 1.

Table 1. Journey to work flows into and out of Saddleworth and Todmorden  
1961

		<u>Workplace zones</u>		
		Saddleworth	Lancashire	Yorkshire
<u>Residence zones</u>				
	Saddleworth		3,790	120
	Lancashire	1,550		
	Yorkshire.	100		

		<u>Workplace zones</u>		
		Todmorden	Lancashire	Yorkshire
<u>Residence zones</u>				
	Todmorden		850	650
	Lancashire	220		
	Yorkshire	290		

From these figures it is evident that Saddleworth is in fact strongly oriented westwards and so it should not be included in our study area. The case for Todmorden is much less clear cut. The journey to work data is not conclusive and so Todmorden is tentatively included within the West Yorkshire Study Area.

Figure 2 maps and Table 2 lists the six county boroughs,, eleven municipal boroughs, twenty eight urban districts and the six rural districts that together make up the West Yorkshire Study Area. The numbering of the fifty one areas is according to their order of appearance in the censuses, which facilitates the extraction of data from this source.

Fig.2 - The West Yorkshire Study Area:  
51 Local Authority Areas

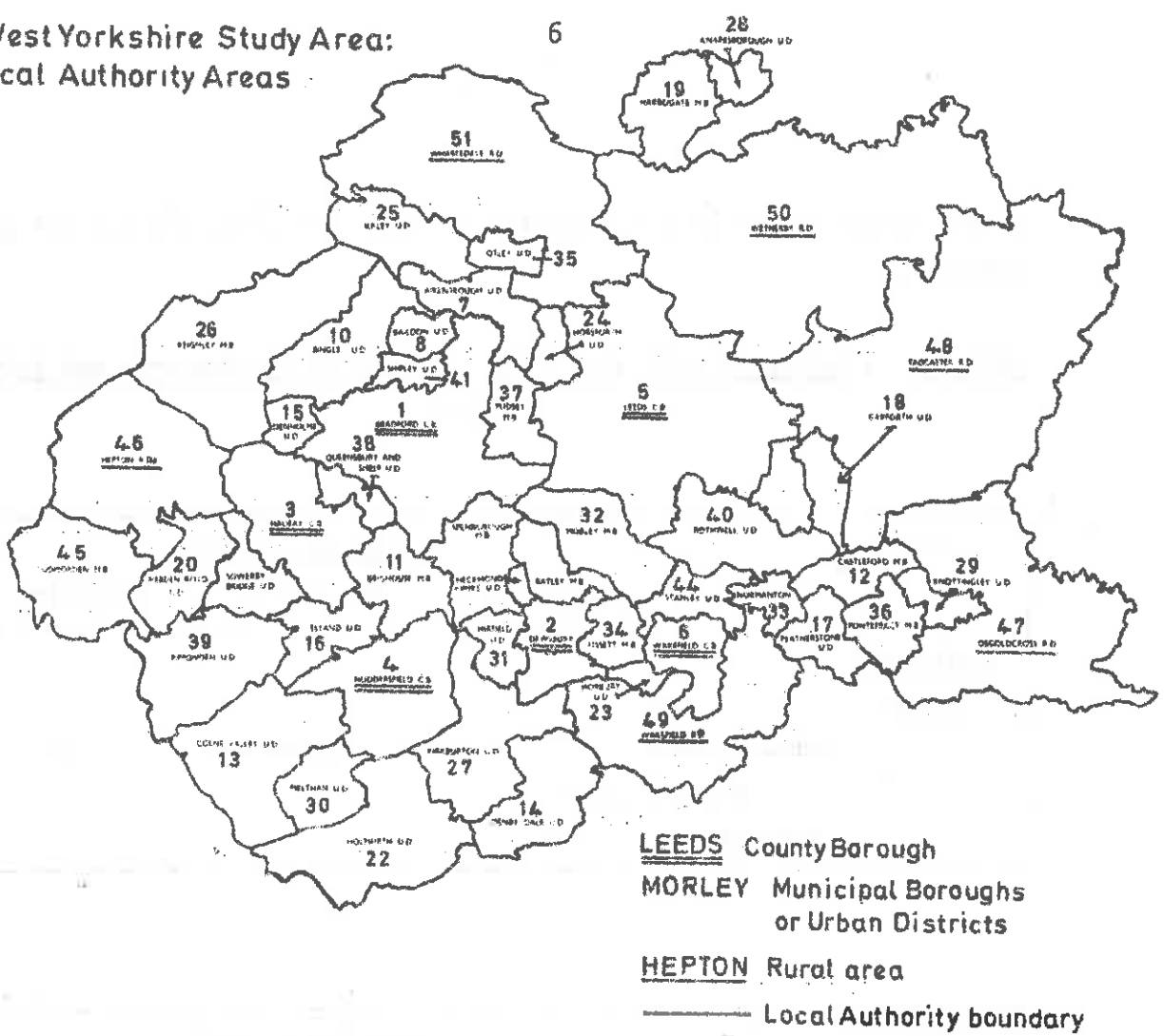


Fig.3 - The West Yorkshire Study Area  
81 Zones

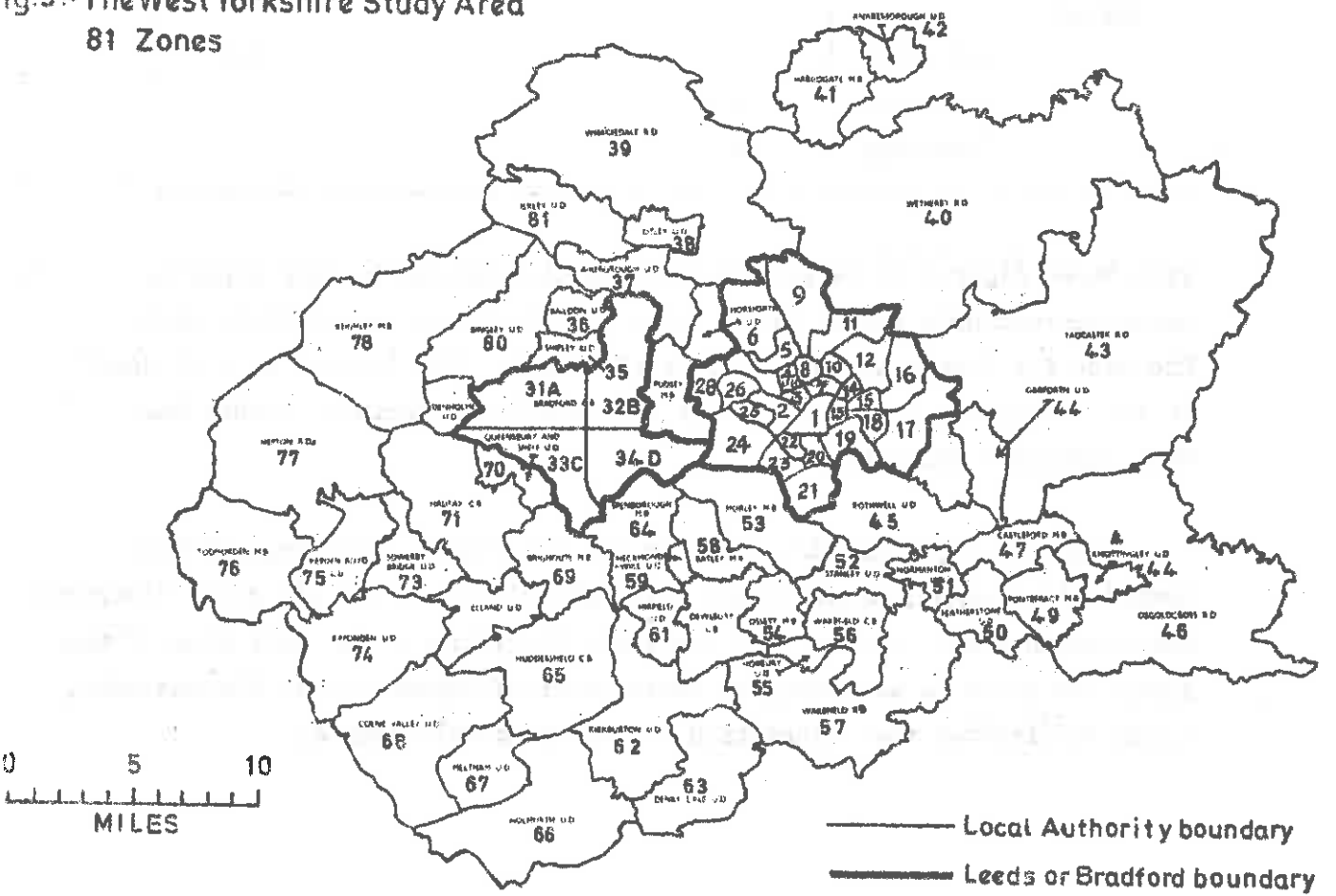


Table 2. Local authorities in the West Yorkshire Study Areas

(Zone numbering employed is that used in demographic and activity location models).

County boroughs

- |                 |                   |
|-----------------|-------------------|
| 1. Bradford     | 27. Kirkburton    |
| 2. Dewsbury     | 28. Knaresborough |
| 3. Halifax      | 29. Knottingley   |
| 4. Huddersfield | 30. Meltham       |
| 5. Leeds        | 31. Mirfield      |
| 6. Wakefield    | 32. Morley *      |

Municipal Boroughs and Urban Districts

- |                  |                          |
|------------------|--------------------------|
| 7. Aireborough   | 33. Normanton            |
| 8. Baildon       | 34. Ossett*              |
| 9. Batley*       | 35. Otley                |
| 10. Bingley      | 36. Pontefract*          |
| 11. Brighouse*   | 37. Pudsey*              |
| 12. Castleford*  | 38. Queensbury and Shelf |
| 13. Colne Valley | 39. Ripponden            |
| 14. Derby Dale   | 40. Rothwell             |
| 15. Denholme     | 41. Shipley              |
| 16. Elland       | 42. Sowerby Bridge       |
| 17. Featherstone | 43. Spenborough *        |
| 18. Garforth     | 44. Stanley              |
| 19. Harrogate*   | 45. Todmorden*           |
| 20. Hebden Royd  |                          |
| 21. Heckmondwike |                          |
| 22. Holmfirth    |                          |
| 23. Horbury      |                          |
| 24. Horsforth    |                          |
| 25. Ilkley       |                          |
| 26. Keighley*    |                          |

Rural Districts

- |                 |
|-----------------|
| 46. Hepton      |
| 47. Osgoldcross |
| 48. Tadcaster   |
| 49. Wakefield   |
| 50. Wetherby    |
| 51. Wharfedale  |

\*Municipal Boroughs.

#### 2.4. Sub-division of Leeds and Bradford

In some cases Wilson (1974, p.7) models have been developed for just parts of the West Yorkshire Study Area, or for the area and the rest of the West Riding. (With the rest of England and Wales and the rest of the World being used for completeness if required).

County boroughs of Leeds and Bradford are occasionally divided into sub areas using the twenty eight wards in Leeds (1966 ward boundaries) and the four sectors used in the West Yorkshire Transport Study for Bradford. The Leeds wards by themselves have sometimes been the subject of special studies. When the subdivision of Leeds and Bradford is used, the areas are renumbered starting in the Central 'City' ward of Leeds and working round the other wards in a clockwise direction, starting in the North West. Then the authorities of Horsforth and Pudsey are numbered, followed by the sectors in Bradford, and the remaining local authorities, again, clockwise and starting in the North West.

This is shown in Figure 3 and Table 3.

Table 3. Study Area Zones in the West Yorkshire Study Area.

(From A.G. Wilson (1974) W.P. 84 appendix 1).

(Zone numbering used in transport models).

<u>Leeds wards</u>	<u>Local authorities</u>	
1. City	29. Horsforth	57. Wakefield R.D.
2. Wellington	30. Pudsey	58. Batley
3. Westfield	31. Bradford 'A'	59. Heckmondwike
4. Hyde Park	32. Bradford 'B'	60. Dewsbury
5. Nearwood	33. Bradford 'C'	61. Mirfield
6. Headingley	34. Bradford 'D'	62. Kirkburton
7. Blenheim	35. Shipley	63. Derby Dale
8. Woodhouse	36. Baildon	64. Spenborough
9. Moortown	37. Aireborough	65. Huddersfield
10. Potternewton	38. Otley	66. Holmfirth
11. Allerton	39. Wharfedale	67. Melfham
12. Roundhay	40. Wetherby	68. Colne Valley
13. Richmond Hill	41. Harrogate	69. Brighouse
14. Harehills	42. Knaresborough	70. Queensbury and Shelf
15. Burmantofts	43. Tadcaster	71. Halifax
16. Crossgates	44. Garforth	72. Elland
17. Halton	45. Rothwell	73. Sowerby Bridge
18. Osmondthorpe	46. Osgoldcross	74. Ripponden
19. East Hunslet	47. Castleford	75. Hebden Royd
20. Hunslet Carr	48. Knottingley	76. Todmorden
21. Middleton	49. Pontefract	77. Hepton
22. Holbeck	50. Featherstone	78. Keighley
23. Beeston	51. Normanton	79. Denholme
24. Wortley	52. Stanley	80. Bingley
25. Armley	53. Morley	81. Ilkley.
26. Bramley	54. Ossett	
27. Kirkstall	55. Horbury	
28. Stanningley	56. Wakefield C.B.	

### 3. The West Yorkshire Metropolitan County

In February 1971, proposals for the re-organisation of local government in England were issued. (See D.O.E.(8/71) and Command Paper 4584 (1971)). These were sent to local authorities for comment and discussion. They took into consideration the report of the Royal commission on Local Government of 1966. (The Redcliffe-Maud Report), as well as the then newly elected Conservative Parties Commitment to introduce a two tier system of government. The West Yorkshire area became one of the six proposed Metropolitan Counties. Each of the Metropolitan Counties was subdivided into Metropolitan Districts, in the case of West Yorkshire, and these were based on the six county boroughs as follows.

- From District
- a). Bradford C.B.
  - b). Leeds C.B.
  - c). Halifax C.B.
  - d). Davsbury C.B. & Huddersfield C.B.
  - e). Wakefield C.B.

Each Metropolitan district also consists of a number of local authorities, as well as the county boroughs shown above. In the initial proposals of February 1971 the West Yorkshire Metropolitan County included more local authorities on its eastern and northern sides than the new county that was finally adopted in 1972. The authorities included, at that time (February 1971) that were eventually excluded (1972) were roughly as follows,

- District
- a). Bradford
    - parts of Skipton R.D. and Skipton itself.
  - b). Leeds
    - parts of Wharfedale R.D., Parts of Niddersdale R.D., Harrogate M.B. and Knaresborough U.D.
    - parts of Wetherby R.D. and most of Tadcaster R.D.
  - c). Wakefield
    - parts of Osgodcross R.D.,
- Also the whole of Queensbury and Shelf was included in Bradford.

The text continues on page 12



Figure 4 shows the boundaries of the areas referred to.

The comments of local authorities and other parties were then used to amend the initial set of suggestions, and a second set was produced. These are listed in D.o.E. (84/71) and the 1971 Local Government Bill, the latter also detailing functions and organisational matters. However, this list is not the final solution, and although it omitted nearly all of the areas on the North and East sides that have already been mentioned, it was still slightly different. The authorities that were included at this time (November 1971) that were eventually excluded (1972) were as follows.

From District b). Leeds

in the rural district of Wetherby the parishes of Kearby with Netherby, Sicklinghall and Weeton.

Also, Horbury and Ossett were included in d). Dewsbury and Huddersfield, and not e). Wakefield.

The third and final set of authorities that come into effect on 1st April 1974 are listed in D.o.E. (107/72), and also in the Local Government Act of 1972. This is the set that is mapped and listed in Figure 4. This also shows the Metropolitan District boundaries, and the boundary of the West Yorkshire Study Area. It is obvious that there are substantial similarities between the latter and the Metropolitan County boundary, except on the northern and eastern margins. Thus the Study Area falls somewhere between the two areas proposed (February 1971 and November 1971) and the area finally adopted as the new Metropolitan County (1972) D.o.E. (33/74) lists the orders and circulars that have been issued on the subject of the re-organisation, and is a useful starting point for the study of the new allocation of functions, or the organisation of the new authorities. Statutory Instrument Number 137 (1973) names the new districts of the Metropolitan County as follows.

Name of County	Identification letter of District	Name of District
West Yorkshire	a	Bradford
	b	Leeds
	c (Halifax C.B.)	Calderdale
	d (Dewsbury & Huddersfield)	Kirklees
	e	Wakefield

The new districts were named after consultation and by agreement with the then existing local authority councils. Further information on the re-organisation is available in Local Government in England and Wales: A Guide to the New System, which is to be published soon.

Reference to the 1971 Census County Report for the West Riding (Table 4, page 26) shows that there were no changes in the boundaries of the authorities which form the new metropolitan county between 1961 and 1971. This simplifies the production of 'historical' data for the area from 1961 considerably. The footnotes of this table, do however show that the parish of Barwick in Elmet in the Rural District of Tadcaster, was renamed Barwick in Elmet and Scholes between 1961 and 1971 though.

Figure 4 shows the boundaries of the new West Yorkshire Metropolitan County, and those of the five Metropolitan Districts. The boundaries of the pre-existing local authorities and parishes, where relevant, are distinguished.

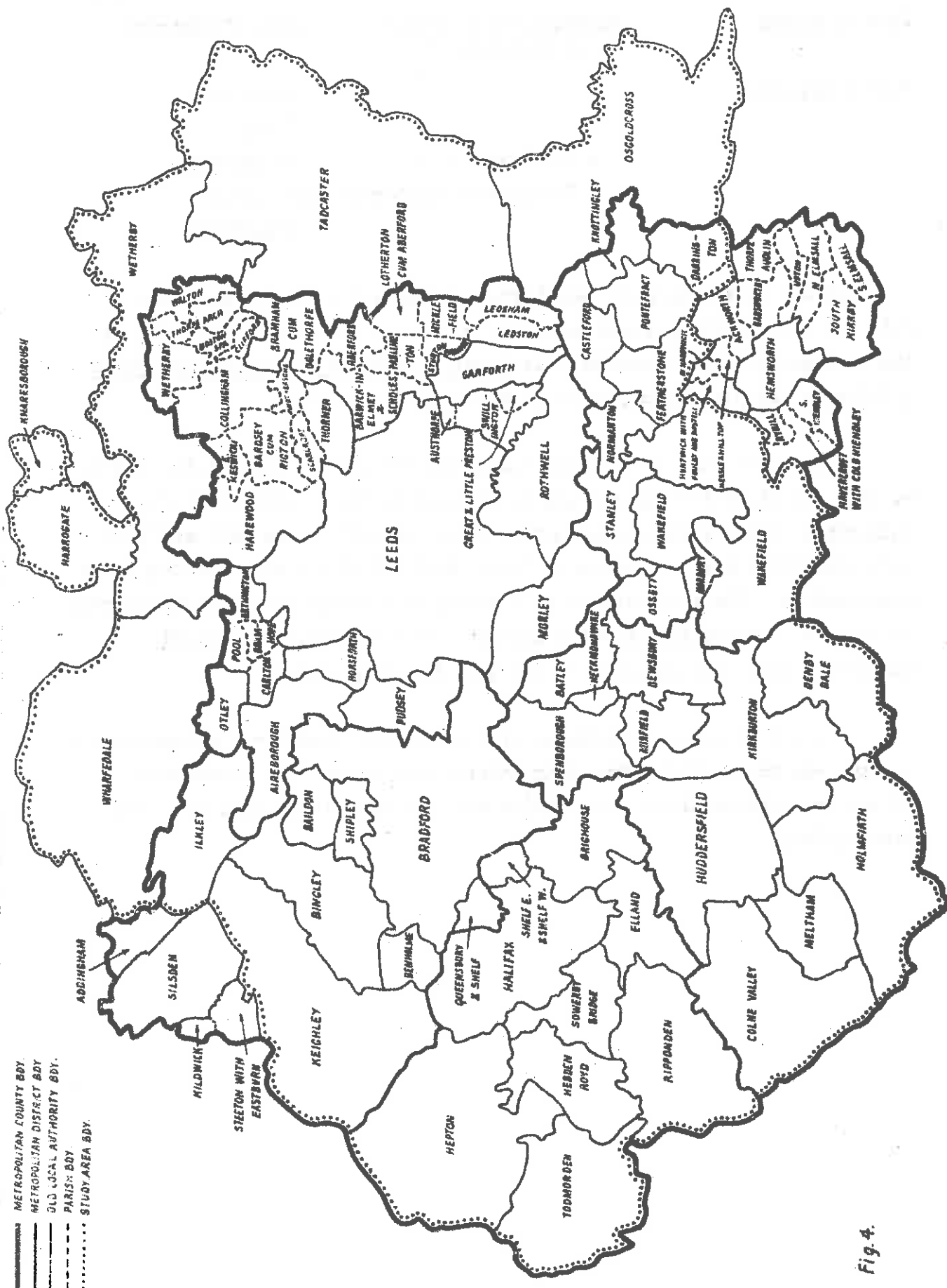


Table 4. The composition of the Metropolitan Districts in the West Yorkshire Metropolitan County in terms of pre-existing authorities.

(From Local Government Re-organisation in England Areas of New Counties D.O.E. circular.).

District (a)	BRADFORD
	The County Borough of Bradford
	*The Borough of Keighley
	*The Urban Districts of Baildon, Bingley, Denholme, Ilkley, Shipley and Silsden.
	*In the Urban District of Queensbury and Shelf, the wards of Ambler Thorn, Queensbury North and Queensbury South (*)
	*In the Rural District of Skipton the parishes of Addingham, Kildwick and Steeton with Eastburn.
District (b)	LEEDS
	The County Borough of Leeds
	*The Boroughs of Morley and Pudsey
	*The Urban Districts of Aireborough, Garforth, Horsforth, Otley and Rothwell.
	*In the Rural District of Tadcaster, the parishes of Aberford, Austhorpe, Barwick in Elmet and Scholes, Great and Little Preston, Ledsham, Ledston, Lotherton cum Aberford, Mickelfield, Parlington, Sturton Grange and Swillington.
	*In the Rural District of Wetherby, the parishes of Bardsey cum Rigton, Boston Spa, Bramham cum Ogelthorpe, Clifford, Collingham, East Keswick, Harewood, Scarcroft, Thorner, Thorp Arch, Walton, Wetherby and Wothersome.
	*In the Rural District of Wharfedale, the parishes of Arthington, Bramhope, Carlton, and Pool.

(\*) Those not in district (c)

\*In the Administrative county of Yorkshire, West Riding.

Table 4 continued.

District (c)

CALDERDALE

The County Borough of Halifax

\*The boroughs of Brighouse and Todmorden

\*The Urban Districts of Elland, Hebdon Royd, Ripponden and Sowerby Bridge.

\*In the Urban District of Queensbury and Shelf, the wards of Shelf East and Shelf West.

\*The Rural District of Hepton.

District (d)

KIRKLEES

The County Boroughs of Dewsbury and Huddersfield.

\*The boroughs of Batley and Spanborough

\*The Urban Districts of Colne Valley, Derby Dale, Heckmondwike, Holmfirth, Kirkburton, Meltham and Mirfield.

District (e)

WAKEFIELD

The County Borough of Wakefield

\*The Boroughs of Castelford, Ossett and Pontefract

\*The Urban Districts of Featherstone, Hemsworth, Horbury, Knottingley, Normanton and Stanley.

\* (\*) The Rural district of Wakefield

In the Rural District of Hemsworth, the parishes of Ackworth, Badsworth, Havercroft with Cold

Hiendley, Hessle and Hill Top, Huntwick with Foulby and Mostell. North Elmsall, Ryhill, South Elmsall

South Hiendley, South Kirkby, Thorpe Audlin, Upton and West Hardwick

\*In the Rural District of Osgoldcross, the parishes of Darrington and East Harwick

(\*) Those not in North Yorkshire and South Yorkshire

\*In the administrative county of Yorkshire, West Riding.

Table 5 gives the enumerated population totals (i.e. the number of people present on Census night) for 1961 and 1971 for the parts of the West Yorkshire study Area that is not in the Metropolitan County (cells (B)), and vice versa (cells (a)). Also given is the enumerated population total (males and females) for the area that is in both the West Yorkshire Study Area and the Metropolitan County (cells (c)). From these figures it can be calculated that 5.21% of the West Yorkshire Study Area population was not in the Metropolitan County (4.72% in 1961). Also 3.06% of the population of the Metropolitan District is not in the Study Area in 1971, (3.05% in 1961). Also given is a breakdown of cells (A) and (B) for the local authority areas (and parts of areas) involved. These are given in order of size of enumerated population(\*) so for example Harrogate is the largest authority (or part of one) (By total population) that is in the Study Area, but not in the Metropolitan County.

Table 5. A comparison of the West Yorkshire Study Area and West Yorkshire Metropolitan County Population.

1971 Population		Location after local government reorganisation into West Yorkshire Metropolitan County		
		In WYMC	outside WYMC	Totals
Location with respect to the Study Area	In WYSA	2,004,328 <sup>(c)</sup>	110,122 <sup>(b)</sup>	2,114,450
	outside WYSA	63,314 <sup>(a)</sup>		
Totals		2,067,642		

(\*) Except for Skipton R.D. (parts of) and Silsden in 1961 as they change places between 1961 and 1971.

1961  
population

Location after local government reorganisation  
into West Yorkshire Metropolitan County

		In (WYMC)	outside WYMC	Totals
Location with respect to the Study area West Yorkshire Study Area	In (WYSA) outside WYSA	1,944,256 (c) 61,178 (a)	96,355 (b)	2,040,611
Totals		2,005,434		

Of cells (B)

	<u>1961</u>	<u>1971</u>
Population of Harrogate	56,345	62,427
R(Tadcaster)	16,393	20,638
Knarborough	9,309	11,878
R(Osgoldcross)	7,251	7,823
R(Wetherby)	4,902	5,304
R(Wharfedale)	<u>2,155</u>	<u>2,052</u>
	96,355	110,122

Of cells (A)

Population of Hemsworth RD (parts of)	37,214	37,219
Hemsworth U D	14,413	14,851
Skipton RD (parts of)	4,360	5,661
Silsden	<u>5,191</u>	<u>5,583</u>
	61,178	63,314

#### Sources

1961 Census County Report on Yorkshire West Riding, Table 3.

1971 Census County Report on Yorkshire West Riding, Part 1, Table 3.

From these figures it can be seen that in terms of total population the main difference between the Study Area and the Metropolitan County is that the former includes Harrogate and all Tadcaster, whereas the latter excludes these except for some parishes in Tadcaster and includes Hemsworth RD, and Hemsworth U D. Note also that the total population of the Metropolitan County is slightly smaller than the population of the West Yorkshire Study Area.

#### 4. Converting Local Authority Data to Metropolitan District Data.

Figure 5 shows the basis of the matrix that can be used to convert local authority data to data for the five Metropolitan Districts in the West Yorkshire Metropolitan County. The matrix has a row for each of the local authorities required. The first 51 rows are the authorities included in the Study Area in census order and the last 4 are ones that only appear in the Metropolitan County. There are six columns in the matrix, one for each of the five metropolitan districts, and one for the 'rest of the world'. The values of the elements of the matrix show which authority is allocated to which district. If the value is one, then the authority specified by the row is wholly within the metropolitan district specified by the column. All the other values in that row will then be set equal to zero. Note that Harrogate and Knaresborough are allocated to the 'rest of the world', as they are not included in the new metropolitan county. (They could strictly speaking be omitted, but are included here for completeness, and also so that data used in the analysis of the Study Area can be easily converted to produce data for the Metropolitan districts if required). Some of the elements of the matrix have values intermediate between one and zero, and these are shown in Figure 5. These are for the seven local authorities that are divided up by the new Metropolitan District proposals. A unique case is Queensbury and Shelf, which is divided between Calderdale (Halifax) and Bradford districts, as the other six authorities are all divided between one of the metropolitan districts and the 'rest of the world'.



Figure 5. Allocation of Local Authorities to the Metropolitan Districts

	Rest of England & Wales	e Wakefield	d Kirklees Dewsbury & Huddersfield	c Calderdale (Halifax)	b Leeds	a Bradford	
CB's						1	Bradford
			1				Dewsbury
				1			Halifax
			1				Huddersfield
					1		Leeds
		1					Wakefield
					1		Aireborough
						1	Baildon
			1				Batley
						1	Bingley
				1			Brighouse
		1					Castleford
			1				Colne Valley
			1				Denby Dale
						1	Denholme
MB's & UD's				1			Elland
		1					Featherstone
					1		Garforth
	1						Harrogate
				1			Hebden Royd
			1				Heckmondwike
			1				Holmfirth
		1					Horbury
					1		Horsforth
						1	Ilkley
						1	Keighley
			1				Kirkburton
	1						Knaresborough
		1					Knottingley
			1				Meltham
RD's			1				Mirfield
					1		Morley
		1					Normanton
		1					Ossett
					1		Otley
		1					Pontefract
					1		Pudsey
				1			Queensbury & Shelf
					1		Ripponden
							Rothwell
						1	Shipley
				1			Sowerby Bridge
		1	1				Spenborough
				1			Stanley
				1			Todmorden
UD's				1			Hepton
							Osgoldcross
		1					Tadcaster
							Wakefield
							Wetherby
RD's							Wharfedale
		1					Hensworth
						1	Silsden
							Hensworth
							Skipton

WYSA



- elements with value less than 1 but greater than zero
- all other elements zero unless set equal to one.

If these seven rows or authorities were disaggregated into and parishes, then the process of allocating ones and zeros could be continued, as described for the other authorities. Thus the parishes of Addingham, Kildwick and Steeton with Eastburn from Skipton RD would have ones in column six (and zeros in all other columns), to show that they went into Bradford district (a), and all the other parishes in Skipton RD would have a one in column one (and zeros elsewhere) to show that they were not in the metropolitan county. Some data is only available to local authority level, though, so allocation into the correct district or rest of the world could not be done by this method. Instead, a series of weighting coefficients were developed, to divide the local authority data between the two districts for Queensbury and Shelf) or between the district and the rest of the world (for the remaining six authorities). Note that the sum of the weighting coefficients for one authority (i.e. the row sum) should still be equal to one. One possible method of estimating these coefficients is to obtain them from the proportion of the total enumerated population of the local authority that is to be formed in the specific district. This can be done fairly easily, as the total population figures for each parish can be obtained relatively easily(\*). (Published volumes for the 1961 and 1971 censuses). Figures 6, 7 and 8 give the values of these coefficients obtained by this method for the seven authorities, for the total population and also for males and females separately, for 1961, 1966 and 1971.

(\*)Parish population data for the 1966 Census was obtained from the West Yorkshire Metropolitan County Council, who must be thanked for their co-operation.

Figure 6

Factors for converting Local Authority Data to Five Metropolitan Districts  
Data (West Yorkshire Metropolitan Area) 1961

	Rest of England & Wales	e Wakefield	d Kirklees Dewsbury & Huddersfield	c Calderdale (Halifax)	b Leeds	a Bradford	
All persons				.34493875		.65506125	Queensbury & Shelf U D
	.90887440	.09112560					Osgoldcross RD
	.61408503				.38591497		Tadcaster RD
	.22440945				.77559055		Wetherby RD
	.29756973				.70243027		Wharfedale RD
	.27970580	.72029420					Hemsworth RD
	.81309213					.18690787	Skipton RD
Males				.35232690		.64767310	
	.90721649	.09278351					
	.61890904				.38109096		
	.22534811				.77465189		
	.30559541				.69440459		
	.27924354	.72075646					
	.81809091					.18190909	
Females				.33829831		.66170169	
	.91052240	.08947760					
	.60922221				.39077779		
	.22353150				.77646850		
	.29012510				.70987490		
	.28017275	.71982725					
	.80863146					.19136854	

Extrapolated population data from the 1961 Census was used to calculate these proportions.

Figure 7

Factors for converting Local Authority data to five Metropolitan Districts  
Data (West Yorkshire Metropolitan Area) 1966

	e	d	c	b	a	
	Rest of England & Wales	Wakefield	Kirklees Dewsbury & Huddersfield	Calderdale (Halifax)	Leeds	Bradford
All persons				.37358101		.62641899
	.87159091	.12840909				
	.60365449				.39634551	
	.20172802				.79827198	
	.31058496				.68941504	
	.28466731	.71533269				
	.8148972					.18510728
						Queensbury & Shelf U D Oldcross RD Tadcaster RD Wetherby RD Wharfedale RD Hemsworth RD Skipton RD

Male				.36786469		.63213531
	.8696522	.13043478				
	.59908437				.40091563	
	.19313945				.80686055	
	.32142857				.67857143	
	.27647285	.72352715				
	.81542461					.18457539

Female				.37903226		.62096774
	.87380952	.12619048				
	.60837272				.39162728	
	.21044663				.78955337	
	.30104712				.69895228	
	.29289026	.70710974				
	.81439084					.18560916

Enumerated population data from the 1966 10% Sample Census was used to calculate these proportions. Information on the parish populations was provided by the West Yorkshire Metropolitan County Council.

Figure 8

Factors for converting Local Authority Data to Five Metropolitan Districts  
Data (West Yorkshire Metropolitan Area) 1971

	e	d	c	b	a	
	Rest of England & Wales	Wakefield	Kirklees Dewsbury & Huddersfield	Calderdale (Halifax)	Leeds	Bradford
All persons			.34932280		.65067720	Queensbury & Shelf U D
	.85722113	.14277887				Osgoldcross RD
	.59896680			.40103320		Tadcaster RD
	.17296028			.82703972		Wetherby RD
	.27562122			.72437878		Wharfedale RD
	.26823562	.73176438				Hemsworth RD
	.78512867				.21487133	Skipton RD
Males			.34630350		.65369650	
	.85999556	.14000444				
	.59800664			.40199336		
	.17036648			.82963352		
	.27592020			.72407980		
	.26996483	.73003517				
	.79439402				.20560598	
Females			.35214858		.64785142	
	.85451396	.14548604				
	.59991907			.40008093		
	.17551813			.82448187		
	.2753474			.72465260		
	.26652319	.73347681				
	.77682620				.22317380	

Enumerated. Population data from the 1971 Census was used to calculate these proportions.

## 5. Concluding comments

Computer programs have been developed to effect the aggregation of pre-reorganisation local authority data to the new local authority areas. These should have wider application.

In the paper the variety of West Yorkshire regional definitions that exist have been described. Official statisticians and academic social scientists have long felt the need to define and study a West Yorkshire region and its major nodal sub-regions. The West Yorkshire region has always been identified as a closely interacting cluster of cities and towns. The nodal sub-regions within West Yorkshire centred on the cities of Leeds, Bradford, Halifax, Huddersfield and Wakefield have defined by partitioning the interacting cluster into regions dominated by one or other workplace and business centre. Today, as a result of local government reorganisation, the statistical and analytical concept of West Yorkshire has become the administrative fact of the new Metropolitan County and the nodal subregions have become the new Metropolitan Districts. This paper has attempted to trace the links between analytical and new administrative regions so that the modelling activity connected with the first set can be of use to the planners of the second. It will also serve, we hope to connect on going analytic work on the West Yorkshire Study Area, with prospective work on the new West Yorkshire Metropolitan County. It should serve as a useful reference source on study areas for researchers and planners working in the region.

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