Some aspects of the urban geography of Chester le Street and Houghton le Spring and other small urban settlements in north Durham

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SOME ASPECTS OF THE URBAN GEOGRAPHY OF CHESTER LE STREET AND HOUGHTON LE SPRING AND OTHER SMALL URBAN SETTLEMENTS IN NORTH DURHAM

by

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Submitted in candidature for the degree of
Doctor of Philosophy of the
University of Durham

February 1967

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ACKNOWLEDGEMENTS

The author is greatly indebted to all those who have helped him during his research period at Durham. He would especially like to thank the following:

Professor Fisher for the opportunity to do research in his Department.

Dr. D. Thorpe, his Supervisor, for expert advice and helpful supervision.

The Durham County Planning Office (J. Blair in particular).

Various members of staff of the Chester le Street and Houghton le Spring district councils.

The technical staff of the Geography Department for their assistance in the preparation of the thesis.

He is also extremely grateful to Pauline for her patience in the typing of this manuscript.

The Commonwealth Commission for the award of a Research Studentship.

Introduction

This thesis examines the nature of the functional development of two small towns in the heavily populated coalfield area of North Durham. An examination of their evolution is made in Section one. In Section two a broader perspective is introduced in order to understand more fully their role as retail service centres.

North Durham is part of the North East coalfield. It's settlement pattern has been determined by two major factors, the development of coal mining during the 19th century and the subsequent growth of the industrial complexes on the rivers Tyne and Wear. The significance of these two factors has varied over time. Both are still important but increasingly the port conurbations play the dominant role. Fig.A.1 shows the regional setting.

The effect of coal mining on the settlements of the area is apparent from the sporadic settlement pattern, particularly in north-west Durham. The rapid development of coal mining in North Durham during the 19th century, changed the old settlement structure which had evolved on an agricultural base. Mining villages were grafted on to agricultural villages or else new villages were built specifically to serve the collieries. The decline of coal mining has been such that at the present time

virtually no new housing developments are based on the location of collieries. Other factors now determine the settlement pattern of the area e.g. the port conurbations.

The ports of the Tyne and Wear grew considerably in size and importance during the 19th century. The outward expansion of the two port settlements in the last hundred years has been such that today it is almost impossible to provide a meaningful definition to the extent of each i.e. it is not possible to say where the built-up area or influence of one stops and that of the other begins. In many ways the two conurbations function as an interacting entity. Robinson (1953) described this wider area as the Tyneside Urban Tract but the urban complex is more frequently divided into two conurbation units. The Tyneside Conurbation (pop. 850,000) was formed by the coalescence of several nuclei along the river Tyne; the Wearside Conurbation (pop. 200,000) was of unitary growth and developed from the twin nuclei of Bishop and Monkwearmouth - the present extent of this conurbation is limited to Sunderland and a small area beyond its administrative boundary.

The port conurbations of Tyneside and Wearside had their maximum growth rate during the 1850-1914 period. Tyneside grew from about 200,000 in 1850 to three-quarters of a million by 194; in the same period Wearside grew from 70,000 to about 170,000 (see Smailes, 1960, p.179). The elongated spread of housing and industrial development along the river Tyne was a feature of the 19th century growth of the conurbation, but in the inter-war and post-Second World War periods the most important feature of its growth has been its expansion to areas north and south of the river.

In its southward expansion the Tyneside conurbation has drawn many of the mining and agricultural settlements of North Durham, within its built-up area; this is apparent from the scale of private housing development in this area. During the inter-war period there was some outward expansion of the two conurbations but it was only in the post-war period that this has assumed the dimensions of a flood. A measure of the present and future needs of the conurbations can be gauged from the fact that they are among the most overcrowded areas in England and Wales. The designation of Washington as a New Town, principally to serve the needs of the population in the conurbations, is a further indication of the scale of the suburban movement.

Chester le Street (U.D. pop. 19,000) and Houghton le Spring (U.D. pop. 31,000) are two small/medium towns in North Durham. They are more or less equidistant from the ports of the Tyne and wear respectively and are located at critical points relative to the port nuclei. They are at present the largest settlements standing isolated from the continuously built-up areas of Tyneside and Wearside. This thesis examines their development since 1800 in order to see what contribution these locations have had as against their 'in situ' role as mining settlements and as service centres for limited areas of the coalfield.

During the 19th century the towns were caught up in the coal mining economy and, in the course of the century, lost virtually all their pre-19th century functions with the exception of their service role. By 1914 the employment structure of both towns was little different to those of other mining settlements in the area. The growth of the towns during this century was largely determined by the size and prosperity of the local collieries.

During the inter-war period there was a general decline in the coal mining industry of North Durham. It became clear, during this period, that the future of the

towns could not depend indefinitely on coal mining - employment at collieries in the vicinity of the two towns was either static or else declining. Since there were virtually no other industries in the towns it was equally clear that the future of the towns would depend on either attracting new industries or else in becoming a residential centre for the expanding industrial areas, mostly in the conurbations. During this period the towns continued to act as service centres for the surrounding settlements.

In the post-war period the Durham coal mining industry declined even more rapidly. Employment in the local collieries has declined considerably and many of the collieries have closed. The number of miners resident in the towns has also declined, partly because of emigration (to other areas within the coalfield or other coalfields in England and Wales), and partly because of a lower percentage of young people entering the industry. The towns have been rather unsuccessful in attracting new industries and so their modern roles are as dormitory and service centres.

In the performance of their two functions as dormitory and service centres, the towns are strongly influenced by the conurbations. The high level of

employment in the conurbations and the outward suburban movement of the population have brought about a closer association between the towns and the conurbations. The improvement in transport has also been responsible for shortening the time-distance between the towns and their respective conurbations. The greater accessibility between the towns and the conurbations has enhanced the former's development as residential centres but it has had the opposite effect on their viability as service centres for the surrounding settlements.

It was felt that the interaction between the towns and the rest of the urban complex of North Durham/ Tyneside could not be properly understood without the study of an area beyond the limits of the two towns. One element of the functions of the towns was accordingly selected for more detailed study over a wider area. It was decided to examine the shopping role of service centres in the region. North Durham is an example of a fairly densely built-up area and a type of area that is rather infrequently examined by students of central place systems. Chapter 1 (introduction), Section 2 describes briefly the problems involved in the analysis of the shopping characteristics of this region and stresses

the importance of this approach to the understanding of the complex interactions between centres for the provision of this facility.

SECTION 1

PART A

Chapter 1

The Durham Coalfield - 19th Century

Chester le Street and Houghton le Spring are both situated within the Durham coalfield; the former lies in the region of the exposed coal measures while the latter is within the concealed coalfield and lies at the edge of the Magnesian limestone plateau.

For a proper appreciation of the evolution of the two towns it is first necessary to examine the growth and character of the rest of the County and particularly the coalfield during the 19th century. Though the two settlements had been of some importance previous to 1800, the changes that took place during the 19th century in the coalfield led to a transformation of the functions and character of the towns. Thus some of their more distinctive characteristics can be traced back to their 19th century roles in the Durham coalfield.

Smailes recognises three periods in the development of the Durham coalfield during the 19th century (i) 1800-1825, (ii) 1825-1850 and (iii) 1850-1914 (Smailes 1935).

During the first quarter of the century there was little disturbance in the Durham coalfield. Although there was throughout this period a net gain in migration (see Table A.1) immigration was not of much importance. Coal mining which

had been carried out in the area for about five centuries was still restricted to within 3 or 4 miles of tidewater (Smailes, 1935, p.221). The coalfield area was still for the most part rural.

The limiting factor at this time was mainly inadequate transport but an important extension of the coalfield took place towards the end of this period. This was the winning of the first colliery in the Permian Magnesian limestone (concealed coalfield) at Hetton in 1822. One year later a colliery was sunk in the town of Houghton le Spring and the township's population consequently rose from 996 in 1801 to 3,917 in 1831 (a typically rapid increase for a settlement experiencing mining colonisation). The other sections of the exposed coalfield showed only moderate increases in population.

The second quarter of the century was a revolutionary period in the Durham coalfield as 'a wave of mining colonisation swept over the coalfield as the railway system was provided' (Smailes, 1960, p.162). This period saw the breakdown of the traditional settlement structure of North Durham. Agricultural villages were transformed into virtually monofunctional mining villages e.g. Waldridge, near Chester le Street, in which 85% of occupied males in

1851 were coal miners. New villages were also being built almost exclusively for coal miners e.g. Middle Rainton, near Houghton le Spring, was built c.1825 to serve the Rainton collieries and in 1851 coal miners accounted for 80% of its occupied males.

The whole of the Chester Registration District and most of the Houghton Reg. District had been colonised before 1825 and were, therefore, to some extent by-passed by the wave of immigrants during the second quarter of the century. This was very apparent in the Houghton Reg.District where in spite of its recent colonisation there was an 18% loss of population between 1831 and 1841 as miners were drawn off to the south and west.

After 1850 there was little areal expansion in the coalfield but rather a 'consolidation' and intensification of activity in areas already occupied' (Smailes, 1960, p.162).

For the first half of this period (1850-1880) there was vigorous growth throughout the coalfield. Immigration into the county during this period was 50% higher than that for the previous thirty years (colonisation period). By 1880 little scope was left for further extension of the mining area; the principal later additions were in the south-east of the Magnesian limestone plateau. The 1871-

81 census period was the last to show a net gain in migration and out-migration has since then become a fixed demographic feature of the county.

Migration

The most important feature of Durham's growth during the 19th century was the scale of the population movement both internally and externally. The great influx of population into the county had a direct or indirect influence on virtually every aspect of the county's social and economic life. The major focus of the in-movement was the coalfield and for a proper understanding of the growth and changes that took place there it is necessary to examine the degree and nature of the migration into the county (external) as well as the movement of the Durham population into or within the coalfield area (internal).

(a) External migration

Table A.1. shows the net gain or loss in migration for each decennial period from 1801 to 1911. The first two decades show only moderate gains while the third heralds the start of Durham's rapid growth. Smailes considers that immigration started in earnest after 1825 with the improvement in rail transport. Between the 1821 and 1881 censuses the county enjoyed an unparalleled rate of growth - generally the highest percent increase in the country.

Table A.1

County Durham - Migration

	Net gain loss (-)	% net gain or loss (-)
1801-11	905	0.6
11-21	5,921	3.3
21-31	17,859	8.6
31-41	41,283	14.5
41-51	40,000*	12.0*
51-61	47,423	11.5
61-71	82,233	15.2
71-81	21,623	3.1
81-91	- 20,372	- 2.3
91-01	- 12,196	- 1.2
1901-11	- 37,745	- 3.1

* estimated from actual increase

An analysis of the birthplaces of those enumerated in the county in 1861 is shown in Table A.22 in the Appendix. About 32% of the enumerated population was born outside the county; the majority of these were from the four contiguous counties of Northumberland, Yorkshire, Cumberland and Westmorland. Ireland and Scotland accounted for over half of the other immigrants. The Irish influx came mainly in the 1841-51 period (1847 famine in Ireland) when some 250,000

Irish entered England and Wales - from 1.6% of the county's population in 1841 the Irish born number rose to 4.5% in 1851.

Even during this period of mass immigration it is important to note that there was also a significant out-movement of the Durham born population. In 1861 seven counties in England had a net gain of migrants from Durham - of these only three showed a significant gain and these were the London counties of Middlesex, Surrey and Kent.

Some of the observed evidences or consequences of heavy immigration during the 1821-81 period were to be seen in the imbalance in the age-sex structure of the county's population and particularly in the coalfield areas. This took the form of:

(i) a disproportionately high increase in the male population e.g. whereas the male population increased at the annual rate of 2.03% (E. & W. 1.45%) for the first 50 years of the century, the female population increased at only 1.70% (E. & W. 1.37%).

(ii) selective male immigration which resulted in an above average number of males relative to females in most age groups but chiefly in the intermediate groups e.g. in 1851 Durham was one of only four English counties to contain

more males than females in the 20-40 years age group (Monmouth, Stafford and Lincoln were the others).

(iii)A very high birth-rate - a common phenomenon among mining populations but also a result of the predominantly young ages of the immigrants.

The rapid inflow of migrants and the high birth rate soon raised the county from an under-populated area to one possessing a larger than proportionate share of the country's population (see Table A.18 in the Appendix). It is noticeable that the rising population is checked after 1881 but the high birth rate maintains the percentage increase in population above the national average.

(b) Internal migration

'There has at all times been a high mobility of place among the mining population but this has usually been associated with a low mobility of occupation'. (House, 1959, p.40).

Although it is difficult to measure precisely the degree or scale of internal movement in the development of the Durham coalfield, it is nevertheless obvious that there was considerable movement of this kind. It is also true that whereas external immigration was of importance only during the 1825-1880 period, internal movement into the coalfield

preceded this period and was still of singular importance right up to the First World War.

Throughout the 19th century internal migration not only resulted in the transference of population from the rural parts of the county e.g. Weardale, to the industrial parts, especially the coalfield, but also from one mining centre to another within the coalfield. The Houghton Reg. District exhibits both aspects of internal migration

(i) rural to mining area

(ii)mining area to mining area.

(i) The winning of the first colliery in the Magnesian limestone and the sinking of several others during the 1821-31 period caused a 72% increase in the population of Houghton Reg. District. The mushrooming of the township of Hetton immediately after the winning of the colliery is described thus:

'Before the commencement of the Hetton colliery there was not a house within a mile of the spot which now teems with a numerous mining population' (Fordyce, Vol.2,1857,p 579). The township's population rose from 919 in 1821 to 5,887 in 1831. The increase in population at this time could only have resulted through a significant movement out of rural areas within the county.

(ii) The Houghton Reg. District was also adversely affected in the next decade (1831-41) by the second feature of internal migration - the movement of miners. During this decade there was a loss of 18% in the district's population. Except for the small agricultural ones, all townships within the district had a loss of population. Table A.2 shows the scale of the out-movement in five of the townships.

Table A.2

1841

		Houses	1831/41
Township	No. of houses	% uninhabited	% loss of population
Houghton le Spring	769	9.5	12.3
Penshaw	484	13.2	24.7
W. Rainton	256	13.3	11.0
E. Rainton	338	11.2	11.6
Hetton le Hole	1,145	19.9	29.4
Co. Durham	57,557	5.4	-

In all the above areas the reason for the loss of population was the drawing off of coal miners to new collieries at other places (1851 Census Parl. papers LXXXVI, p.21). This was during the 1825-50 colonisation period which occurred outside the district.

The enumerator's books for 1851 and 1861 also reveal the great mobility of the mining population. Much internal migration was evident from the birth-places of members of the same family. In Chester le Street for instance, the birthplace history of a particular family in 1851 included six collieries besides the one at which the head of the family was then employed*.

Employment Structure of 19th century Durham

At the start of the 19th century agriculture was still the most important occupation in the county while coal mining was already firmly established in coalfield areas where transport facilitated exploitation e.g. near the rivers Tyne and Wear. In addition to mining and agriculture there were the miscellaneous crafts and manufactures which had not yet been brought into the net of large-scale industry. As the 19th century progressed there was a decreasing proportion engaged in agriculture and an increasing proportion in coal mining and the heavy industries e.g. shipbuilding on the Tyne and Wear.

* The six children were aged 6 and under

	Birthplace
Husband -	Urpeth
Wife -	Tanfield
Children -	Birtley, Ouston, Hallgarth, Kelloe Kelloe

County Durham's development during the 19th century was in many ways typical of mining counties. Durham was the first of the mining counties to be fully exploited and some thirty years later much the same characteristics (immigration etc.) were to be seen in counties like Glamorgan and Monmouth when they too enjoyed a period of mining colonisation.

The county's economy was also an integral part of the national structure and prospered as the nation's economy boomed, but national economic factors have differential effects on its constituted parts and Durham suffered from an over-abundance of coal. A product geared to the national market leaves little room for local diversification of employment and as the century progressed Durham's occupation structure conformed less and less with the national average.

Five characteristics became apparent as the county's occupation structure developed:

(i) the low percentage of occupied females
(ii) the low proportion of agricultural workers
(iii) the low proportion of professional workers
(iv) the high proportion engaged in heavy industry
(v) the high proportion employed in coal mining.

During the century, Durham's developing industries were all male dominated. Not only was there a much lower proportion of women in the county's population than in the

rest of England but the employment rate among the females of the county was substantially below the national average. By 1901 only 22.8% of females aged 10 years or more were employed compared to the national average of 31.6%. In 1911 female employment had reached its nadir , 17.9% (E. & W. 31.6%).

At the start of the 19th century Durham had a smaller proportion of workers engaged in agriculture than the national average. The national trend of decreasing employment in agriculture throughout the century was also evident in Durham; the rate of decline in Durham was, however, faster than the national average (see Table A.3). The proportion of the population engaged in agriculture in the coalfield area tended to approach closely the county average - the coalfield lay between the industrial regions of Tyneside/Wearside and the more agricultural regions to the south and west.

Table A.3

% employed in agriculture at selected censuses

	1811	1821	1831	1861	1891	1901
Durham	24.8	20.5	14.7	7.5	2.1	1.5
Eng. & Wales	36.0	35.2	28.7	14.6	6.1	4.6

Throughout the second half of the century Durham had a very low proportion of professional workers. In 1891 it had the lowest percentage of such workers in the whole of England and Wales. The coal mining districts in the county generally had the lowest proportion of such workers.

Table A.4

% employed as professional workers

	1861	1891	1901
Durham	1.9	2.4	2.2
Eng.& Wales	3.8	4.2	3.8

Throughout the century but especially in the second half there was a growing proportion engaged in heavy industry. After 1850 most of the heavy industries, notably iron and steel and the allied industry, shipbuilding, were concentrated at the 'port conurbations' (Smailes, 1960, pp 174-183). Shipbuilding was becoming increasingly important towards the end of the century and by 1901 about 28,000 men were employed in this industry (32% of the total in England and Wales) - an increase of over 40% on the number employed in 1891. For the most part heavy industry avoided coal mining districts with the exception of Consett Iron Works. Small industrial works in the coal mining districts were giving way to large scale industrial plants elsewhere.

Next to agriculture coal mining was the most important industry at the start of the 19th century. The first census count of coal miners was in 1841 when 15,156 males were thus occupied (16% of all occupied males). However, as early as 1808 a survey showed that there were 7,393 coal miners in the county which would suggest that they formed at least 15% of occupied males at that time (Bailey, 1810, pp. 10-27).

Throughout the century there was continuous growth in the number of coal miners employed in Durham. There were two features in the growth of the coal mining industry

(i) the number of miners employed in the county was directly related to the total number employed in England and Wales, and

(ii) coal mining accounted for an increasingly larger proportion of all occupied males in the county.

Table A.5 shows the potentially deleterious effect that the nationally oriented coal industry had on the county's economy. Whereas coal miners increasingly formed a higher proportion of occupied males in the whole of England and Wales the situation became alarming in County Durham where by 1911 one-third of all occupied males were coal miners. The situation in the coal districts was even more serious and generally 60% or more of occupied males were thus employed.

Table A.5

	Coal miners as % of total males occupied		Durham coal miners as % of total in E. & W.
	Durham %	E & W %	%
1841	16.1	2.2	15.2
1851	21.1	3.2	15.4
1861	20.8	3.8	14.9
1871	17.1	3.7	15.6
1881	24.3	4.9	17.3
1891	25.0	5.8	15.7
1901	26.0	6.3	15.4
1911	33.4	7.6	16.5

In the Stanley area the percentage was not far below 80% (see Table A.27 in the Appendix).

The mining settlements

Within the coal districts the essential function of housing was to serve the pits and thus the two features of the 19th century housing layout in mining areas were:

(1) the ubiquitous rows or terraces stretching at times up to half a mile in length. The terrace housing form introduced into Durham during the century was ideally economical both in space and building cost. (see Smailes, 1960, pp. 196-97)

(2) the compactness and proximity to the pits of the pitmen's rows. The building of these rows as near as practicable to the mines was to ensure the miner's regular and punctual presence at work as well as an insurance against his seeking employment elsewhere. (See Burnett, 1962).

The theme then, was isolation and complete dependence on the mine. In his description of miners, the Rector of the parish of Washington wrote in 1821:

'They form a very distinct race, inasmuch as they marry almost exclusively among themselves, and bring up their sons to their own course of life. They also live very much together, keeping little society with other classes of people' (Parish Register Abstract, 1821, p.34).

As early as 1850 Durham and in particular the coal districts had begun to show signs of over-crowding. In the large towns the 'scotch' style of building prevailed (i.e. houses divided horizontally into flats) while the small terraced houses spread through the coal mining districts. The first census count of rooms in 1891 shows that Durham and Northumberland were the two most overcrowded counties in England and Wales. (See Table A.6).

The overcrowding in Durham was caused by the small sizes of tenements and the large sizes of the Durham families (see

Table A.6

% of population in overcrowded conditions.
(i.e. more than 2 persons per room)

Most overcrowded in England & Wales

Counties	%	Large towns	%
Northumberland	30.7	Gateshead	40.8
Durham	34.0	Newcastle	35.1
W.R.Yorkshire	16.5	Sunderland	32.9

England and Wales 11.2%

Tables A.23 and A.24 in the Appendix). For instance, 59% of tenements in Durham consisted of 3 rooms or less as against 28% in England and Wales. When the Urban Sanitary districts with a population of over 15,000 were taken out of account the overcrowding figures for the rest of the county were even higher - a clear reflection of conditions in the mining villages. (See page 43 for conditions in Houghton le Spring in 1853).

Chapter 2

The Pre-1939 Evolution of Houghton le Spring and Chester le Street

Pre-19th century

In 1801 the population of the two towns was small : 996 in Houghton le Spring and 1662 in Chester le Street.* The difference in size was to a large extent a reflection of differences in their development of urban functions. Whereas Chester le Street had grown into a town possessing urban attributes, Houghton le Spring was still a village in character with few urban functions. The histories of the settlements before this date were, as their functions at that time suggest, very different.

The site of Chester le Street was occupied by a Roman camp - the station (cavalry) was established in the early period of the Roman rule and was one of the last to be deserted in the Empire's fall (Arch. Aeliana, 1855, Vol.1. pp. 289-95). From 882 to 995 it was the seat of the episcopal see of Durham whose diocese extended from the Tees to the Forth. During the medieval period it had certain ecclesiastical importance e.g. a collegiate church, but it is doubtful what other urban functions it fulfilled,

* These figures refer to the townships. See Fig.A.4. for map showing the extent of the main settlements c. 1856.

if any. Leland who travelled during the reign of Henry VIII wrote:

'The toune of Chester is chiefly one streate of very meane building in height. There is beside a smaul streate or two about the Church Collegiate, that hath a dean and prebenderies, but it is a very meane building' (quoted in Mackenzie & Ross, 1834, Vol.1. p.112).

In the 17th and 18th centuries a slow growth developed, associated with the developing economy of North-East England. With the development of mining in the immediate area in the late 17th century Chester le Street acquired certain industries; for instance, the first blast furnace to use coked coal in the north of England was erected by Mr.I. Cookson on Chester burn at Whitehill about 1704 (V.C.H. Vol.2. p. 290). With the improvement in mining equipment e.g. steam engines for the pumping out of water from pits, the areas near Chester le Street were becoming more important and the town was called upon to serve as a central place for the developing area i.e. it was the settlement where services for the surrounding area could be established. Thus in 1724, a Mr. John Potter of Chester le Street advertised himself as an agent for the erection of these engines (V.C.H. Vol.2. p.327).

In 1769 the town's colliery, South Pelaw, was sunk at a distance of half a mile from the town centre. It seems likely, however, that the colliery was rather small and temporarily ceased operating by the end of the 18th century - it does not appear in Bailey's list of 1810 nor in the lists of other writers about this time.

Towards the close of the 18th century Chester le Street is described as being

'commodiously situated for supplying the numerous miners employed in the neighbouring collieries and other works'. (Hutchinson, 1787, Vol.2. p. 398).

Houghton le Spring derived its name from the Saxon word 'Hohtun' and means 'Hilltown in the Spring' which is broadly descriptive of the original nucleus of the town in a westward opening valley; one of many villages that

'were strung out along the escarpment taking advantage of well-drained sites, the proximity to different types of terrain and the availability of good water supplies'. (Smailes, 1960, p. 102 and Fig.22c.)

Medieval records show that the original settlement probably dates from the time of the building of Durham Cathedral. In 1131 there is the first mention of a Rector of Houghton le Spring (Rushford, 1950, p.13). Houghton was at this time one of the more extensive manors of the Prince Bishop of Durham and was considered to be among the richest

parishes in England and one given to the King's favourite courtiers. Hutchinson says that 'it is noted in the King's book* the highest of any in England' (Hutchinson, 1787, Vol.2, p.540).

Houghton le Spring throughout the medieval period and until the end of the 18th century was an agricultural township and centre of a very large ecclesiastical parish. It remained largely independent of the surrounding area, supplying little or no services. A map showing roads in 1768 (Jeffrey's) confirms the lack of contact with the immediate area. Excluding the Durham/Sunderland turnpike road, only one road led into the town and this was the road through Newbottle to Newcastle - the road pattern of the surrounding area showed orientations to Sunderland and Durham, the two market towns.

The small population in 1801 and the confinement of the town in the valley suggest a sheltered secluded existence. Its appearance at that time was attractive and there was a number of substantial houses in it e.g. Houghton Hall built c. 1600. Hutchinson describes Houghton le Spring in the late 18th century as follows:

'The town contains many large and handsome buildings, inhabited by persons of considerable wealth' (Hutchinson, 1787, Vol.2, p. 538).

The majority of the wealthy inhabitants of the town at this time lived in Quality Street. It appears that the street was so named because of the class of people who lived there (Rushford, 1950 p.31). Even in 1851, the Census returns revealed the concentration there of gentlemen, professional people and annuitants.

A further indication of the 'dignity' of the town prior to the 19th century was the presence of the Royal Kepier Grammar School. It was started in 1560 by Houghton's celebrated rector, Bernard Gilpin, and the Royal Charter and endowment were given in 1574. The school was for a long time the premier school of the county in status (V.C.H., Vol.1., p.393). In 1827 the school was still in a flourishing condition, there being sixty paying scholars; after 1860 the school declined considerably in status and finally closed in 1922. Of the 36 boarders at the school in 1861, sixteen were from Durham County, ten from Northumberland, three from Lancashire, two each from Yorkshire, Cheshire and Somerset and one from Cumberland.*

There is no evidence of any industries in the town prior to the 19th century. The town and most of the Registration District were agricultural though towards the end of the 18th century coal mines were being opened to the

* From Census returns 1861 - based on birthplaces of boarders at the school.

north (Newbottle) and west (Rainton) of the town. These, however, had to await the technological advances in equipment and transport of the 19th century for full exploitation.

1801-1831

The first quarter of the 19th century saw a switch in the developing trends of the two towns. Chester le Street merely continued its 18th century role as a small industrial and service centre while Houghton le Spring which had hitherto undergone so little change was quite dramatically brought into the mining sphere. From the sinking of the Houghton colliery in 1823 the town developed throughout the century with coal mining as its economic base.

Chester le Street's distinctive role at the end of this period and for most of the 19th century was as an industrial and service centre. The Cookson Iron Foundry, from which at one time the Government got most of their ordnance, continued operating for only a short period after the Napoleonic Wars (V.C.H. Vol.2. p.290) and ceased operations about 1820. The Murray Engine Works started about this time and were reported to be the most noted engineering firm in the county in the first half of the century (V.C.H. Vol.2, p.291). The role of the town as a supply centre was

also firmly established - for instance, 13 of the 34 water-sale collieries in County Durham in 1808 were within Chester le Street's Registration District (Bailey, 1810, pp.10-27).

Occupation tables for the first three Censuses are unfortunately not quite reliable. The first Census (1801) was not at all reliable in its classification of occupations and no inference can safely be drawn from its tables. In 1811 and 1821 families were classified into three occupation groups - those chiefly employed in (a) agriculture (b) trade, manufacture or handicraft, and (c) all others, including the unemployed. In Durham the second and third classes are very unreliable since miners appear to have been assigned, perhaps in equal proportions, to those two classes and considerable allowance has to be made for this want of discrimination even within a Registration District.

Table A.7. shows the percentage of families employed in each occupation group at three censuses, of which the 1831 Census is the most accurate. The table illustrates the difficulty and danger in attempting to make valid deductions from any of the columns or rows i.e. comparison cannot be made between the towns at any one time (column analysis) nor for the same town over the period covered (row analysis). Even agriculture which is by far the most

Table A.7

Occupations of families

'Townships'

	1811		1821		1831	
	Houghton %	Chester %	Houghton %	Chester %	Houghton %	Chester %
Agriculture	16.4	9.8	6.7	18.7	23.2	16.0
Trade, manufac. handicrafts	25.4	52.8	19.0	56.8	32.2	50.5
All others	58.2	37.4	74.3	24.5	44.6	33.5
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

reliable of the three groups shows an unrealistic oscillation in both towns but especially in Houghton le Spring.

The 1831 Census does, however, mark an important stage in the development of the towns. It comes at the end of the first stage in the 19th century expansion of the Durham coalfield viz, the extension of mining to the Magnesian limestone area of the Houghton Registration District. Fortunately, this Census gives more detailed information on the occupations of males aged 20 years or more.

Table A.8 shows the functional differences between the towns at this time. It is clear that Chester le Street was still an industrial and service centre while Houghton le Spring was virtually a colliery settlement. The former's growth during the previous thirty years was stable

while the latter's would be more appropriately described as revolutionary. Thus by 1831, Houghton le Spring had increased its population to over 4 times its size at the start of the century while Chester le Street's population grew by only one-sixth during the same period.

Table A.8

Occupation structure in 1831 (males aged 20 years or more)

	Chester Tp. %	Houghton Tp. %	Chester R.D. %	Houghton R.D. %	Durham City %	Co. Durham %
Agriculture	30.4	21.8	19.9	11.5	11.2	19.8
Ret-trade, manufac. handicraft	56.3	36.5	23.6	21.4	53.6	36.7
Prof. men	6.4	5.2	2.6	2.3	10.5	4.9
Non-ag. Labourers (inc.miners)	4.0	31.7	48.9	61.7	16.8	32.3
Others	2.9	4.8	5.0	3.1	7.9	6.3
TOTAL	451	900	4,093	4,651	2,375	57,449

Table A.8 indicates that the greatest difference between the towns was in the proportion engaged as non-agricultural labourers - these are virtually all coal miners. (Census figures indicate that for the county as a whole two-thirds

of the non-agricultural labourers were coal miners while in coal mining districts the proportion rose to practically 100% e.g. all those recorded in this class in Hetton le Hole). Whereas non-agricultural labourers formed a mere 4% of males aged 20 years or more in Chester le Street, the proportion was 52% in Houghton le Spring.

Mining operations in Houghton le Spring had expanded considerably in the few years after the opening of the town's colliery and the town developed in a manner that was fairly typical of mining settlements in the area. About 1825, soon after the sinking of the colliery, the Houghton New Town was grafted on to the 18th century village in order to accomodate the influx of colliery workers. Almost immediately after its completion, the New Town was described as exhibiting a 'most irregular, crowded and awkward appearance' (Mackenzie&Ross, Vol.1., 1834, p.354).

It is important to point out that the employment figures for males aged 20 years or more underestimate the proportion of coal miners among all employed males; this is especially so in newly developed areas like Houghton le Spring. At this time it was common for boys to start work in the pits at the age of seven or eight. (The first accurate count of coal miners in 1841 showed that coal

miners formed 24% of occupied males under 20 years but only 14% of all others).

Chester le Street at this time was as dependent on its engineering industry as Houghton le Spring was on its colliery. With 56% of its older males engaged in retail trade, manufacture and handicrafts, the town was still in its 18th century mould. Its chief industry, the Murray Engine Works, prospered during this half of the century and was renowned for its colliery engines. The unchanged nature of the town is emphasized by the high proportion of males employed in agriculture (30%). In 1834 the town was described as follows:

'The whole place has a clean, lively and comfortable appearance and though it has no weekly market yet a considerable traffic in the necessaries of life is maintained with the industrious population of the neighbourhood' (Mackenzie & Ross, Vol.1., 1834, p.113).

Houghton le Spring, on the other hand, had changed its economic base and showed a remarkably close approximation to the employment structure of County Durham which at this time was also in the early stage of its coal mining development.

A comparison of the two Registration Districts in Table A.6 shows that the only significant differences are in

the percentages employed in agriculture and coal mining. The high proportion of non-agricultural labourers in Houghton Reg. District (62%) is indicative of the scale of the population movement into the district during the previous decade and of the rapid development of its collieries. The advanced equipment used in the area as well as the geological superiority of the coal seams enabled larger mines to be sunk and exploited than was characteristic of the Chester Reg. District at this time. In Houghton Reg. District the population increased to almost four times its size in 1801 while in Chester Reg. District the population increased by only one-quarter.

1831-1851

This was the colonisation period in the history of the coalfield and the number of coal miners in the county rose to over 15,000 in 1841 (at least double the total at the start of the century) and to over 28,000 in 1851 (21% of all occupied males). This was also a period of heavy im igration into the county but both towns were virtually left out of this first wave of immigration as mining areas were being colonised elsewhere. In 1841, for instance, the percentage of the enumerated population of both townships that was born outside the county was 20% compared to 25%

for the whole county. (Note that within the coalfield the percentage would have been higher than the county average).

Table A.9

1851 Occupations of males (all ages)

'Geographic' towns (see text)

	Chester le Street %	Houghton le Spring %
Professional service	5.3	5.0
Domestic Service	8.8	3.7
Agriculture	8.0	4.7
Miners	9.7	22.8
Crafts & Industry	41.7	22.0
Distributive trades	21.0	23.4
General labourers	3.7	16.9
Others	1.8	1.5
Total occupied	648	959

Table A.9 has been compiled from data extracted from the Census returns for the towns and the information has been restricted to the geographic towns i.e. the main settlement or built-up area and, therefore, excludes the mining villages of Colliery Row and Pelton Fell in the townships of Houghton le Spring and Chester le Street respectively. It was easy

to define each town's boundaries firstly from the description of each enumerator's area and secondly from the delimitation of the town by the enumerators themselves. The classification into occupation groups was an ad hoc one and follows the classification suggested by West in 'Village Records' (West, 1962, pp 170-173).

In Table A.9 'crafts and industry' is a fairly wide group and includes those in manufacturing or in handicraft (excluding those concerned in the distributive trades - shoemakers etc.); engineers, iron founders, stone masons, smiths, cartwrights etc. would be included in this group. Table A.9 is not directly comparable with Table A.8 for 1831 for several reasons*.

The towns show broadly the same structures as they did in 1831 except for two important developments. Firstly, Houghton le Spring had diversified its employment structure by the introduction of two iron works and secondly, Chester le Street showed a substantial increase in the percentage employed as coal miners.

During this period two iron foundries were established in Houghton le Spring: George Hopper's which employed 120 men

* see page 45 for a comparison between Chester le Street in 1831 and 1851.

in 1851, and Joseph Cook's which employed 76 men in 1851.* Both works were of modest scale and were founded by local businessmen (George Hopper was recorded in Pigot's Directory of 1829 as an ironmonger). Many of the 196 industrial workers of the two foundries are probably disguised under 'general labourers' in Table A.9 because of the imprecise recording of 'labourers' for 'iron labourers'. This may, however, be indicative of the unskilled nature of the jobs at these works compared to those at the engine works in Chester le Street. If these 'iron labourers' were included under 'crafts and industry' the percentage employed in this group would probably rise to about 30 to 35%.

Chester le Street at this time was still a more important industrial centre than Houghton le Spring both in the range and quality of its industries. The most important industrial concern in Chester le Street was still the Murray Engine Works, which employed 180 men in 1851 (Thomas Murray, the propietor, was also a farmer of 250 acres).** In 1857, Fordyce listed some of Chester le Street's important industries : a large iron foundry, a steam flour mill, a brewery, a skinnery, and a tile and brick manufactory,

* contained in the Census returns, 1851.

** contained in the Census returns, 1851.

in addition to 'the workshops of some considerable cart-wri hts, cabinet makers and other mechanics' (Fordyce, 1857, Vol.2. p. 607). In his account of Houghton le Spring Fordyce mentioned little else but one iron foundry (Cook's had closed soon after 1851) while Kelly added 'several breweries and two brickyards' (Kelly, 1858, p.445).

Table A.10

Distributive Trades, 1851
Geographic towns

	Chester le Street %	Houghton le Spring %
Dealers in food	25	30
Hawkers, shopkeepers	7	20
Shoemakers, tailors, drapers, etc.	68	50
TOTAL occupied	136	224

The distributive trades are an excellent example of the disguised differences between the towns (see Table A.10). Houghton le Spring in the midst of a densely populated mining region and itself densely populated differs strongly from the free standing and remote town of Chester le Street in the type of services provided. Relative to Chester le Street there are in Houghton le Spring (i) a higher percentage of food dealers, (ii) a very high proportion of hawkers and shopkeepers (usually general store keepers) - possibly because

of the nature of the demand of the mining population, and (iii) a lower percentage of specialized or 'quality' dealers, especially clothiers. The third class of distributive traders is the one which most distinguishes the two towns in their relations with the surrounding area.

It would seem that at this time, Houghton le Spring had difficulty in attracting to the town the people of the surrounding area. Fordyce in 1857 noted that the weekly stall market which was started in 1625 had fallen into disuse (Fordyce, 1857, Vol.1, p.549) but only two years after its establishment White had remarked that the market did not flourish as well as was anticipated (White, 1827, Vol.1, p.262) and in 1834 the state of the market was described as follows:

'although the parish be rich and populous, yet it does not flourish being too contiguous to the old markets of Durham and Sunderland' (Mackenzie & Ross, 1834, Vol.1, p.354).

At this time Chester le Street did not have a weekly market. There is no definite evidence that the town ever had a market though it is possible that the town formerly had a market of some sort. On 30th September 1850 there is a record of the discovery in the town of the 'old market cross of Chester le Street' (Latimer, 1857, p. 285). Though the presence of a market-cross does not prove the presence of a

market, there has traditionally been an association between the cross and market. White in 1827 also mentioned that the town's weekly market was then obsolete (White, 1827, p. 235).

Although Chester le Street had no market it is obvious from the histories and directories published at that time that the town was a strong centre for the supply of commercial services. This is probably because of the higher class of people who lived in Chester le Street, and within its 'trade area', and who could support the wider range of shops available in the town. Towards the end of this period it was obvious that Houghton le Spring was becoming progressively less attractive as a settlement and this would certainly have been reflected in the appearance of its shopping centre and indirectly on the attraction to the centre of population from the surrounding area.

A report in 1854 on an enquiry into sanitary conditions in Houghton le Spring gives an insight into the state of the town at this time. The pitmen's rows and the New Town were notorious for their insanitary conditions. The Report stated:

'The pit cottages are generally in a very disgraceful and filthy condition, having ash pits and dunghills both at the back and front' (Sanitary Report, 1854, p.7).

Overcrowding and unhealthy habits among the miners, including the keeping of pigs in their yard, also contributed to the unwholesomeness of the town. In summing up the countless sanitary hazards, the Health Inspector stated that:

'if a catalogue of nuisances were made it must include almost every house in the place' (Sanitary Report, 1854, p.25).

The above descriptions of Houghton le Spring and Chester le Street were restricted to the geographic towns but though direct comparison was not possible with the published figures of the 1831 census which referred to the townships, the same changes would have been apparent if it were possible to draw up comparable tables for the two censuses. Table A.11 attempts this for Chester le Street. Note, however, that the 1851 figures refer to males of all ages. Differences may also arise from the difficulty in classifying certain 19th century occupations e.g. cordwainers, cloggers, cellarmen and fellmongers.

Virtually the same changes are apparent from Table A.11 viz. the fall in employment in agriculture and the rise in the number of non-agricultural labourers (includes coal miners). Table A.12 shows the direct effect of including the area outside the geographical town. The same

would have been apparent if the rest of Houghton le Spring's township was included in the town's employment structure.

Table A.11

Male occupations in Chester le Street Tp.

	1831 %	1851 %
Agriculture	30.4	11.6
Ret.trad, manuf. & handicrafts	56.3	55.2
Professional men	6.4	5.0
Non-agric.labourers	4.0	17.6
Others	2.9	10.7
Total occupied males	451	798

Table A.12

1851 Occupation of males in Chester le Street

	'Town' %	'Township' %
Miners	9.7	13.8
Dist. Trade	21.0	17.9
Crafts & Industry	41.7	37.6
Agriculture	8.0	11.6
Professional service	5.3	4.8
General labourers	3.7	3.4
Domestic service	8.8	9.1
Others	1.8	1.8
Total occupied males	648	798

1851-1875

The period from 1850-1875 marks an important stage in the evolution of Chester le Street and Houghton le Spring as coal mining centres. This was the period during which the 'other' industries of the towns declined and finally ceased operating.

Table A.13 shows the occupations of males aged 20 years or more in the two townships in 1861. At this time the two towns exhibited the same differences hitherto observed in agriculture, coal mining and industry. The high percentage engaged in agriculture (15%) and the low proportion of coal miners (7%) emphasize the unchanged nature of Chester le Street. This is further indicated by the fact that the geographic town had expanded little since 1801 - in sixty years its population increased by just over a half to 2,550 during a period when the county's population had more than trebled. Industry was still of major importance in the town and occupied 43% of males aged 20 years or more.

Houghton le Spring was still dominated by the coal mining industry. Some 35% of occupied males aged 20 years or more were coal miners - double the county average and not far below its Registration District's. It's only two industries of note at this time were an iron

foundry and a brewery; thus the percentage employed in industry (24%) is far below that of Chester le Street and the county and is only slightly higher than the average for the whole of its Reg. District.

Table A.13

1861 Occupation of males aged 20 years or more*

	(1) Chester le Street Tp.	(2) Houghton le Spring Tp.	(3) Chester Reg. Dis.	(4) Houghton Reg. Dis.	(5) Durham City	(6) Durham County
Prof.Ser.	5.0	3.0	1.6	1.7	8.7	3.0
Domestic service	2.8	1.5	1.1	0.9	1.8	0.9
Agric.	14.7	7.9	13.0	9.6	7.9	11.0
Commerc.	4.9	4.3	2.5	3.3	6.1	12.6
Coal miners	7.2	35.3	45.4	47.5	5.1	18.7
Distrib. trades	16.1	18.1	5.8	9.1	23.7	10.8
Industrial	42.7	23.8	23.9	20.2	40.7	36.3
Indefinite	6.6	6.1	6.7	7.7	6.0	6.7
Total occupied persons	796	1031	7081	5,387	3,640	140,753

In comparing the two towns with Durham City it is clear that the latter at this period had a completely

* Columns (1) and (2) were compiled from data extracted from the Census returns.

different character and was still the typical county town; this is clearly shown in the high percentage employed in the professions, commerce and distributive trades (Note that the high percentage employed in the commercial group in the county is a result of the inclusion in this class of those employed in 'transport'; the county's figure is inflated by those employed on ships at the ports).

It seems that at this time Chester le Street was in many ways a 'lower order' Durham City - both had retained 18th century industrial roles, both had grown little during the 19th century and, though on a smaller scale in Chester le Street, they had both continued as administrative and judicial centres. Houghton le Spring, on the other hand, was basically different to both towns and exhibited a coal-dominated employment structure.

Table A.14

1861 - all occupied persons*

Occupation groups	Chester le Street Tp. %	Houghton le Spring Tp. %	Chester Reg.Dis. %	Houghton Reg.Dis. %
Prof. service	4.1	4.0	1.9	2.1
Domestic service	13.6	13.4	8.8	9.6
Agriculture	10.5	5.5	9.3	8.1
Coal miners	7.3	30.6	46.7	44.7
Crafts & Industry	38.0	20.0	18.7	13.5
Distributive tds.	17.0	18.9	7.5	11.4
Indefinite	9.5	7.6	7.1	10.6
Total occ.persons	1109	1734	10,027	8,055

* Information was extracted from Census returns. The classification is that of West, 1962 pp 170-173.

Table A.14 shows the occupations of all employed persons regardless of age or sex for the two townships and their Registration Districts. Fig.A.2 and Table A.25 in the Appendix show the same information for all townships in the two Registration Districts.

Except for the omission of the 'commercial' class (distributed among professional and domestic service and the distributive trades) TableA.14 is comparable in its classification with Table A.13. Differences that remain, however, are the inclusion of males under 20 years of age and also of all females in Table A.14.

The inclusion of females should have the effect of increasing the percentage employed in domestic service and to a lesser extent in the distributive trades. All other occupation groups should show a smaller percentage, more so in the male dominated occupations like coal mining than in others like professional service.

Table A.14 shows, however, a rise in the percentage of those employed as coal miners in the Chester Reg. District and no change in Chester le Street township. The rise in Chester Reg. District can be accounted for by the opening of new mines and the expansion of old ones in the district. This led to a net gain of 11% in migration during the previous decade (cf. a loss of 6% in

the Houghton Reg. District) and a swelling of the ranks of the male population especially those in the younger age groups e.g. 15-24 years (see Table A.24 in the Appendix). In 1861 coal miners in the county accounted for 29% of occupied males under 20 years of age but only 19% of the older males. As a result of the gain of young male population during the previous decade 31% of coal miners in Chester Reg. District in 1861 were under 20 years of age compared to 26% in Houghton le Spring, which had had a loss in migration. (The county average was, as expected, in between the figures for the two districts and coal miners under 20 years of age formed 28% of all coal miners).

In the townships of the Chester Reg. District coal mining was by far the most important occupation. Excluding the two smallest and thinly populated townships, it was only in Birtly (12%) Chester le Street (7%) and Barmston (1%) that coal miners formed a significantly lower proportion than 40% of all occupied prsons (equivalent to about 50% of occupied males). Waldridge was by far the most dominated township and coal miners formed 88% of all occupied persons. The township showed a characteristically high proportion of males (54% of total population) and a

concentration of males in the 15-24 years age-group (13.5% of total population).*

Unlike Chester le Street's there was a clear division of townships in the Houghton Reg. District with respect to coal mining. Coal mining was still restricted to the western edge of the Magnesian Limestone plateau and the six townships in the east of the Registration District were still thinly populated and predominantly agricultural (Fig.A.2). The western townships were virtually given over to coal mining; only Houghton le Spring (31%) fell appreciably below 40% in the proportion of miners to the total occupied persons.

Both Registration Districts had a low proportion engaged in professional service. This was a common characteristic of County Durham in the 19th century and the coalfield areas were noted for having the lowest proportion of professional workers in the county. In both Registration Districts there was a distinct concentration of such workers in Chester le Street and Houghton le Spring - 24% and 42% respectively of the total prsons who were so employed in their own Registration District. Chester le Street had 11% and Houghton le Spring 22% of the total population of their respective Registration Districts.

* Cf. Table A.24 in the Appendix

The greater importance of industry in Chester le Street is reflected in the relatively high percentage of such workers resident in the township - 23% of all industrial workers in its Registration District. Houghton le Spring accounted for 32% of those in its Registration District. Besides Chester le Street township, the Registration District contained chemical works at Washington and Barmston and a large iron works at Birtley (this township accounted for 22% of the industrial workers of the Registration District). Houghton le Spring township, on the other hand, contained the only large industrial concern in the whole of its Registration District.

There was also a concentration in the two towns of those engaged in the distributive trades. Chester le Street had 25% and Houghton le Spring 35% of those engaged in distributive trades in their respective Registration Districts. In Houghton Reg. District, Hetton le Hole had 31% of these workers but this was only 1% higher than the township's share of the District's population. In Chester Reg. District there were no very large centres - Birtley (11%) and Witton Gilbert (10%) were the only townships in which the number of workers in distributive trades exceeded the expected number based on their share of the District's population.

It would seem, therefore, that though there were differences in the basic industries of the two towns - coal mining in Houghton le Spring and manufacturing in Chester le Street - both towns had developed central place functions beyond the needs of the local population and it is thus reasonable to suppose that they served the surrounding area as well. Chester le Street appears to have been at this time a better class centre with a wider sphere of influence. Houghton le Spring had a larger proportion of people engaged in distributive trades (72‰ of the population) than Chester le Street (62‰ of the population) but this was mostly because of the larger number of food dealers - to be expected in a densely populated mining area. Note that in the rest of the Registration Districts the same differences are evident; thus excluding the two townships, workers in distributive trades formed 28‰ of the population in Houghton Reg. District but only 19‰ in Chester Reg. District.

Two further indications of the strength of Chester le Street as a service centre were the establishment of a co-operative society in 1862 and the publication of a weekly newspaper. The co-operative society grew from a membership of 8 in its first year to 1500 after 10 years.

Its first branch was established in 1876 at Daisy Hill (Edmondsley township) but before this membership had spread to a wide area. The first country members to join in the 1860's included some from as far off as Sacriston and Pity Me (four miles away). It is interesting that membership spread easier to areas west of the river Wear*. Kelly's Directory refers to the success of the co-operative society and adds that 'in 1869 a large hall was erected for carrying on the business which is very extensive' (Kelly, 1873, p.30).

During this period of the 19th century it was a fairly common role of small towns in England to publish a weekly newspaper. In 1857, Fordyce wrote that in Chester le Street

'a printing office was commenced a few years ago, at which an effort is now being made to establish a weekly newspaper'. (Fordyce, 1857, Vol.2, p. 607).

The weekly newspaper started publication soon after and was known as 'The Chester le Street Liberal and Houghton le Spring Advertiser'. The paper was in effect a Chester le Street paper and the inclusion of Houghton le Spring was, one assumes, in order to derive advertising revenue from that area. This is brought out by an analysis of the first

* History of Chester le Street co-operative and industrial Society.

26 issues of 1861. There were only three issues that carried news on Houghton le Spring while the average number of Houghton le Spring advertisements placed in the paper was 3 per issue compared to 45 per issue for Chester le Street.

It would appear that the paper had a fairly wide circulation. Kelly noted that its circulation was 'considerable in the north of England' (Kelly, 1858, p. 381). The newspaper itself claimed in 1861 to have a 'guaranteed circulation of upwards of 1,000' (Jan. 12., 1861) and that it was circulated in '40 towns and large villages in this county' (Feb. 23, 1861). Fig.A.3 suggests that the circulation area was probably restricted to the two Registration Districts. The concentration of agents in the Houghton le Spring area suggests a lack of easy contact with Chester le Street; with the exception of Washington and Durham all the newspaper's agents are on the east side of the Wear.

An analysis of advertisements and news items in the paper confirms that at that time Chester le Street was already strongly oriented towards Newcastle and Tyneside and not to Sunderland. There were an average of 8 Newcastle advertisements per issue, 4 from Gateshead

and less than one from Sunderland (one advertisement in five issues). Advertisements for Chester le Street shops often carried such advice as 'why go to Newcastle when you can save money, time and labour etc.'

After 1861 there was a decline in the industries of the two towns which was marked by an increase of activity in coal mining within the townships and throughout the coalfield (see House, 1959, pp 36-37). This was especially noticeable in Chester le Street. During the 1861-71 decade the geographic town of Chester le Street declined in population (2,550 to 2,450) - it is likely that during this decade the town's chief industries were declining rapidly in importance. During the same decade the rest of the township, i.e. outside the town, had a fourfold increase of population 460 to 1,760. The township's collieries were in a flourishing state by 1871 - over 200 were employed at South Pelaw, over 200 at Chester Moor (sunk in 1860's) and over 600 at Pelton colliery.

It was not, however, until about 1875 that the town of Chester le Street was finally pulled into the coal mining sphere. It was about this time that the Murray Engine Works closed and though there is no evidence of a shift by those formerly employed in the engine works to

the collieries of the town, it is quite likely that many did in fact make such a change. There was probably also a movement of workers from out of the town to the Herton Fell and Chester Moor colliery districts. The Stag Confectionery Works began operating at this time in the same building that the Murray Engine Works had occupied.

In Houghton le Spring the chief industry of the town, the Hopper Iron Works, also closed c. 1875 and the town became almost completely dependent on coal mining. The Houghton colliery employed over 650 men and boys in 1871. A measure of the dependence of the town on the colliery was the number of houses owned by the colliery; in 1869 the colliery owned 413 houses and by 1879 this rose to 615. (N.C.B. records, Durham Archives).

1875-1914

During this period the growth of the towns was directly related to the coal mining industry. At the start of this period, however, both towns were very different. Houghton le Spring had been transformed during the 19th century into a mining town while Chester le Street had retained much of its 18th century character and its townscape was relatively unchanged. The town of Houghton le Spring

had increased to over four times its size in 1801 while the town of Chester le Street had grown by only one-half and was now only half the size of Houghton le Spring, - a reversal of their relative positions at the start of the century. During this period, 1875-1914, there was a reversal of the 19th century trend hitherto observed in the two towns and while Chester le Street trebled its size, Houghton le Spring increased by only one-half.

Table A.17 in the Appendix shows that in the 1871-81 decade Chester le Street township increased its population by 58%. Most of this increase almost certainly took place outside the town but there must also have been some development in the town itself. Production in collieries within the township but outside the town doubled during this decade with the sinking of a new colliery (Newfield) at Pelton Fell and increased activity at Chester Moor. The South Pelaw colliery also showed a large increase in production. All things pointed to the flourishing state of the township's collieries and to the first significant growth in the town of Chester le Street during the 19th century.

The 1871-81 decade was not as significant a period in the growth of Houghton le Spring. The closure of its iron works meant a further dependence on coal mining which

in 1871 must have accounted for almost 50% of occupied males. The township's growth during this period was not impressive and was much lower than that of its Registration District which enjoyed a vigorous growth because of an extension of mining to the higher parts of the Magnesian limestone, near Silksworth. The Houghton colliery probably suffered from a drawing off of miners to the new areas and consequently there was only a small increase in the number of men employed.

Both towns were now almost equally dependent on the future of coal mining. During the 1871-81 decade the number of coal miners in Durham increased at a much higher rate than the country as a whole - 56% as against 41% (see Table A.19 in the Appendix). As a result coal miners in Durham in 1881 formed 17% of the total in England and Wales - the only Census year of the 19th century in which the percentage varied significantly from 15% (see Table A.5). The industry appears to have been overmanned in the 1880's and there was a slack period in the Durham coal trade in the second half of this decade so that whereas the number of coal miners increased by 58% from 1874-84, the corresponding increase for 1884-94 was only 4%.

Both towns showed a drop in their population growth during this decade, 1881-91. The towns were adversely affected by the fall in production and employment at the local collieries. The town of Chester le Street probably grew a little in the first half of this decade but growth must have halted with the closure of the South Pelaw colliery c.1886. A further factor contributing to the stagnation in the town of Houghton le Spring was the extension at this time of mining operations to the south-east of the Magnesian limestone plateau.

Both towns had higher increases in population from about 1890 to the First World War, From c. 1895 coal production expanded significantly and continued until the start of the First World War. Employment at the Houghton colliery rose from just under 1,000 in 1891 (only a slight increase on the 1871 figure) to 1,550 in 1901 and to 2,000 in 1911. The employment structure of the town reflected this heavy dependence on coal; of occupied males aged 1[illegible] years or more, 56% were coal miners in 1901 and 63[illegible] in 1911.

In Chester le Street, the South Pelaw colliery re-opened c.1897 and it soon employed more men than at any previous time in its history. In 1901 the colliery employed 530 men and this rose to 760 by 1911. Employment

figures are not available for the town in 1901 since it was not an urban district but at least half of the occupied males would have been coal miners. In 1911 coal miners accounted for 61% of the occupied males aged 10 years or more.

Within a radius of two miles of either town there were several collieries which together employed 3-4,000 men. There must have been at this time a significant daily movement out of the towns to the neighbouring collieries. For instance, in 1905 a special service was started for miners in the Houghton le Spring area by the Sunderland District Tramways; the trams linked all the mining areas of the Registration District and special services ran at 2 a.m. (Staddon, 1964).

Table A.15 summarises some of the changes which took place in the towns during the second half of the 19th century. By using the same company, Kelly's it is hoped to eliminate the inconsistencies in classification and listing that are to be found in 19th century directories.

Houghton le Spring shows no significant changes in its occupation structure at the end of the 32-year period. This is to be expected since the town was already a mature mining town by 1850 and was never very industrialized. As has been observed before the town has a relatively high proportion engaged in the distributive trades.

Table A.15

Occupations listed in Kelly's P.O.Directory*

Geographic towns of:

Occupations	Chester le Street		Houghton le Spring		Durham City	
	1858 %	1890 %	1858 %	1890 %	1858 %	1890 %
Professional serv.	6.4	13.5	6.1	7.8	9.8	14.1
Distributive tds.	51.5	50.3	67.9	67.4	57.1	54.7
Manufacturing	35.7	25.4	20.4	19.3	26.2	25.2
Farmers	6.4	7.3	5.6	4.6	4.6	2.9
Others	-	3.6	-	0.9	2.3	3.1
Total occupations	171	193	196	218	1164	857

Chester le Street, on the other hand, shows distinct changes in its occupation structure. There is a significant drop in the percentage engaged in manufacturing and a rise in the proportion providing professional service. The town's occupation structure shows a striking resemblance to Durham City's, especially in 1890 when the latter began to lose its preeminent status in the centre of the county - this is reflected in the absolute decline in the number of occupied persons listed.

* Note that because of the incomplete coverage of directories no comparison can be made with the Census tables.

By 1911 the employment structures of Houghton le Spring and Chester le Street were almost identical - see Table A.16. The largest percentage difference between the towns in any one group of occupations was in coal mining - a mere 1.7%. Both towns were dominated by the coal mining industry - 63% of employed males in Houghton le Spring and 61% in Chester le Street. The high percentage of males employed in coal mining in the two urban districts was typical of other towns in the coalfield (see Table A.22 in the Appendix). Except in the Consett area, heavy industry had virtually disappeared from the coal mining districts and was concentrated in the port conurbations (Smailes 1960 p.179). Note the relative absence of industrial workers from the two towns in Table A.16.

Table A.16

Male Employment - 1911

	Chester le St.U.D. %	Houghton le Spr. U.D. %	Co. Durham %
Coal & other mine workers	61.0	62.7	35.6
Agriculture	1.6	2.2	2.9
Profession or Gov't occ.	3.2	3.2	3.2
Food, tobacco, drink	5.2	5.3	4.8
Commercial or retail tde.	5.7	5.3	5.4
Building & construction	7.7	6.9	6.2
Conveyance	5.1	3.7	1.0
Industrial workers	4.5	5.1	37.5
Others	6.0	5.6	3.4
Total occupied	4,720	3,021	432,243

The Inter-War period

'After the first World War the outflow (of migrants) became a flood and continued without a break to 1939' (House, 1959, p.3).

During the inter-war period both towns had a net loss of migrants. The 1921-31 decade showed the highest loss. This was the case in all the coal mining districts - in the Mid and Lower Wear section which includes the two urban districts there was a 16% net loss through migration, twice the previous decennial loss (House, 1959 p. 57). During the 1921-31 decade Chester le Street had a loss of population for the first time since 1851. The loss of population prompted the Local Authority to consider the development of Chester le Street as a dormitory town for industrial Tyneside and the success of the scheme for building owner-occupied houses was reflected in an increase in population from 16,640 in 1931 to 17,510 in 1939 (Registrar General's Estimate).

In the early post-war years the coal mining industry enjoyed a period of renewed prosperity but by the mid 1920's the industry entered into a period of decline and contraction that has been apparent ever since. Factors which contributed to the decline in the industry at this

time were:

(a) the restoration of European economic life after 1924

(b) the general strike of 1926

(c) the effect of Polish competition in the Scandinavian markets.

The loss of export trade during this period was especially damaging to the coal industry of the North East. About 40% of the total production of the coalfield (Durham and Northumberland) before and after the First World War was used in the foreign trade compared to only 20% of the whole country's production (Industrial Survey, 1932, p.6)

In both Chester le Street and Houghton le Spring coal mining was throughout this period the most important occupation. In Chester le Street the percentage of occupied males employed in this industry declined from the pre-war level of 61% to 56% in 1921 and 48% in 1931. In Houghton le Spring, however, there was virtually no decline in the percentage of occupied males who were coal miners - 63% in 1911 and 61% in both 1921 and 1931. The continued high level of employment in coal mining in Houghton le Spring is partly explained by the larger and more economical pits in this area and partly by the lack of alternative employment.

With the exception of the Northern General Transport Depot (Bus) at Chester le Street c.1915 there were no new industries introduced into the towns during this period. The Transport Depot provided employment for an increasing number of males in Chester le Street. In 1921, 6% of occupied males were employed in Transport and Communications and by 1931 this had increased to 11%. In Houghton le Spring there was neither a railway nor bus depot and the percentage of males employed in Transport and Communications was only 4% at both censuses.

Throughout the 19th century female employment in County Durham was below the national average and during the inter war period the situation was unchanged. In 1921 the proportion of occupied females to the total occupied population in England and Wales was 29%; in County Durham it was 18%.

Chester le Street was at this time a more attractive centre for female employment than Houghton le Spring. In 1921 occupied females formed 19% of the total working population in Chester le Street but only 16% in Houghton le Spring. In 1931 unemployment was very high among males (over 20% in both towns) and, therefore, the number of females employed relative to the total occupied

population is very misleading - there were, nevertheless, the same differences between the towns.

Apart from domestic service, the chief female occupations in Chester le Street were food manufacture and the distributive trades. Food manufacture (23% of employed females in 1931) was carried on chiefly at the Stag Confectionery Works. The importance of the confectionery works can be judged by the fact that it probably employed about 250 women and that the percentage of females employed in food manufacture was higher in Chester le Street than anywhere else in County Durham. The distributive trades group (20% in 1931) was the next highest employer of females.

In Houghton le Spring there were fewer employment opportunities for women. There was no important women's industry in or near the town. As a result the highest employment was in the distributive trades (28% of employed women in 1931). Excluding domestic service the only other important occupations were in commerce.

With the declining importance of coal mining it is to be expected that there would have been a significant out-movement of workers from the two towns. Unfortunately, only the 1921 Census gives any information on the journey to work and at this time the coal industry was still

experiencing its post-war prosperity. As a result only 24% of the employed residents in Chester le Street U.D. and 28% in Houghton le Spring U.D.* worked elsewhere. The higher employment opportunities in Chester le Street are evident from the fact that the in-movement of workers exceeded the out-movement (14% higher) whereas in Houghton le Spring in-movement was smaller (1% less). The most significant point, however, was the short distance of the journey to work in both towns.

Of those resident in Chester le Street U.D. but working elsewhere, 78% worked in Chester Rural District while 70% of those working in the Urban District but resident elsewhere were enumerated in the Rural District. In Houghton le Spring the out-movement of workers was chiefly to its Rural District (43%), Chester R.D. (33%) and Hetton U.D. (8%). The in-movement of workers was chiefly from its Rural District (71%) and Hetton U.D. (11%).

An interesting point is the evidence of a small but significant employment in Tyneside (about 10%) of those resident in Chester le Street U.D. but working

*Note that the urban district at this time was still the same size as the 19th century township.

elsewhere - Newcastle was the chief employment centre. There was, on the other hand, no recorded movement of workers from Houghton le Spring into Sunderland.* The situation was in fact reversed and Sunderland accounted for 4% of the in-coming workers in Houghton le Spring U.D. - this is further proof of the prosperity of the coal mines at this time. Chester le Street was at this time linked to Newcastle by rail and bus while Houghton le Spring was connected to Sunderland by a devious tramline and it appears that the friction between rival companies prevented a smoother and more efficient service at this time (see Staddon, 1964).

It seems certain, however, that the journey to work from Chester le Street to Tyneside started in earnest after 1926. The development of Chester le Street as a dormitory town was firmly established by the 1930's.

The Town Guide of 1934 stated that:

'The depression in the staple industry since 1921 has gradually forced the authorities concerned to recognise that the future of the town could not solely depend upon the coal trade and the advent of the by-pass road has opened up the possibility of developing Chester le Street as

*The census did not list administrative areas which attract less than 2% of out-going workers.

a desirable residential area within easy reach of Newcastle, Gateshead, Sunderland and the crowded industrial towns of Tyneside'.

It was with this in mind that the local Council's Hicktree Estate was offered as building sites to owner-occupiers in 1932. Within two years, 200 houses had been built and with the further development of that and other estates some 300 more were to be constructed in another two years.

In Houghton le Spring there was no appreciable development by owner-occupiers. The total of such houses built during the inter-war period (all in the 1930's) was just under 100 houses.

Chapter 3

The character of the towns c. 1939

By the end of the inter-war period both Houghton le Spring and Chester le Street had passed the peak of their development as coal mining centres. It was clear that the future of the towns could not depend much longer on coal mining, the staple industry of Chester le Street for over 50 years and of Houghton le Spring for over a hundred years. The problem was more urgent in Chester le Street than in Houghton le Spring where the pits were larger and more economical. On the other hand, Chester le Street was more favourably situated to take advantage of employment opportunities in other industrial areas, particularly in Birtley and Tyneside.

Neither town was fitted for industrial development and so their future depended on the two other major functions of towns viz. the provision of residential and service facilities. The success of the towns in these roles depended on (a) their nodality and (b) their ability to adjust themselves to the changing needs of a more mobile and demanding population. The roles of the two towns in the post-war period are described in detail in Part B; the growth and nature of their townscapes are here described

for the effect they might have on the success of the towns in the performance of their twin roles.

At the start of the 19th century both towns were small and still strongly influenced by site factors. Thus Chester le Street had shown little latitudinal spread but rather an elongated development along the Great North Road, the 'street' of its name. Houghton le Spring was still contained in the valley where its original nucleus was sited. Hutchinson's description of the town confirms this:

'The village is happily seated at the head of a fine vale opening towards the west and sheltered from the north and east by a chain of hills' (Hutchinson, 1787, Vol.1. p.538).

The morphology of the towns was partly determined by the periods during which expansion took place and partly by relief factors. In the 19th century there were two important public health acts which exercised some control on the building of houses. The first was in 1848 and introduced a method for the control of new buildings and streets while the second in 1875 empowered local authorities to make by laws regulating the construction of houses and the spaces between them i.e. the density of building development.

Relief factors were more favourable to the physical growth of Chester le Street than Houghton le Spring. The former was sited in an area which sloped west-east towards the river Wear - the slope of the land is at right angles to Front Street (formerly the Great North Road). Houghton le Spring, on the other hand was sited in the centre of a small and relatively enclosed valley - in the original valley 'easy' development was restricted in the north and east by relief. (See Fig.A.1)

Houghton le Spring enjoyed its first 19th century growth long before Chester le Street and before the 1848 Health Act. The New Town was built c.1825 and thereafter development spread to the Hillside area adjoining the colliery i.e. within the 'V' formed by Sunderland and Newbottle roads. The residential development of this time was rather ugly and unfortunate (see page 35 for impressions of the layout of the New Town). In their report into the sanitary conditions of Houghton le Spring soon after the first Public Health Act, the Health Inspector wrote:

'The town of Houghton le Spring is very straggling on plan. There is no regularity in the line of streets nor in the houses' (Sanitary Report, 1854, p.25).

Chester le Street's residential growth during the

19th century did not begin until about 1675, the year of the second and more important Public Health Act. Though the town had a fair share of terrace housing between then and the first World War, the grid iron layout of these does not depreciate much from the pleasing aspect of the rest of the town. The terraced houses of this period were built between the Front Street and the railway line which was completed c. 1868 (see Plate A.)

One further indication of the dissimilarity in the development of the two towns in the 19th century is to be seen in the movement of the town centre in Houghton le Spring. The town centre shifted from the old nucleus near the Market Place, to Sunderland Street and to a lesser extent Newbottle Street (east side). This was directly related to the shift of population to the Hillside area, near the colliery - no 19th century development took place after the New Town in the valley of the original nucleus. In contrast to Houghton le Spring, the town centre of Chester le Street remained in the Front Street and retained an almost complete monopoly of the town's central place functions.

In the inter-war period local authority housing formed the bulk of the residential development of the two

towns; this was more so in Houghton le Spring than Chester le Street. In Houghton le Spring U.D. (present area) 2,100 council houses were built of which 1,050 were in the town; less than 100 private houses were built, all of which were in the town. In Chester le Street U.D., 1,400 council houses were built of which 1,100 were in the town; a significantly high number of private houses were also built, 550 in all, all of which were in the town.

The layout of the council estates in both towns was in the familiar geometric pattern of the inter-war years. In Chester le Street the estates were all west of the railway line. These estates were the first developments west of the railway line and marked a major change in townscape and urban form. There were two council estates : the Bullion Estate (850 houses), south of the Cong burn, and the South Pelaw Estate (250 houses), north of the Cong burn and lying between the Newcastle and South Pelaw railway lines.

In Houghton le Spring there were also two large council estates in the town. The largest was the Racecourse estate (750 houses) to the south-east of the town; this was the first major residential development outside the Hillside area since the spread of housing to that area. The second large estate was to the west of the town centre at Burn Park Road (250 houses).

Private housing development did not take place before the 1930's in either town. In Chester le Street private housing development took place only after the local Council had sold some of its land in 1952 for this purpose. The existence of a demand for such housing was made clear by the rapid development of the areas - within 5 years over 500 owner-occupied houses had been built. Practically all the development took place between Front Street and the then recently built by-pass; on the Picktree estate (north-east) there were about 350 houses while about 150 houses were built in the centre of the town to the east of Front Street.

In Houghton le Spring the only private housing development was south of the Racecourse estate. The houses were built chiefly along the link road between the Durham and Hetton roads.

SECTION 1

PART B

Chapter 1

Introduction

In the post-war period the towns have had to adapt themselves to important changes in the economy of the region. The changing employment structure of the region has been characterised by a decline in the number of coal miners and a rise in the number employed on trading estates and the port conurbations.

The decline in coal mining in North Durham has taken the form of a progressive closure of collieries in the west and an expansion of operations in the east; the more important and long-life collieries are those with operations extending out to sea. The contraction of employment in the industry has been mainly through wastage i.e. fewer men are recruited than are retiring, but the closures in the west of the coalfield have meant that an increasing number of miners have been forced to travel to the large collieries of the east coast. But despite its decline, the coal mining industry is still the largest single employer of labour in the region.

Trading estates have grown considerably in the post-war years. The Team Valley trading estate was started in 1937 and was the first of its kind in the

North East. By the outbreak of the war there were already about 4,000 people employed on the estate; it now employs over 15,000. There are about 40 trading estates in the North East and if these estates are taken as a single corporate source of employment they are second only to coal mining as employers of labour.

The port conurbations of Tyneside and Wearside are becoming increasingly important as employment centres for the region. The Hailsham report suggested that planned growth should take place in the eastern half of the region with particular emphasis being placed on favourable areas like Tyneside and Wearside. Also with the outward suburban spread of the conurbations a larger area is becoming involved in what can be termed the commuter zone.

Since the war neither Chester le Street nor Houghton le Spring has attracted any important industries. One of the primary roles of the towns will, therefore, be as dormitories for the nearby industrial centres, mainly the trading estates and port conurbations. At present there is a substantial out-movement of workers from both towns and there are indications that this will increase at a faster rate than hitherto observed.

The second important role of the towns is the provision of services for the local and surrounding populations. The degree to which they succeed in their service role is also strongly influenced by changing economic factors. The greater mobility of the population and the increasing importance of the regional centres of Newcastle and Sunderland are the two factors which largely determine the nature of the (spatial) relationships of the towns with their hinterlands and the extent of their influence.

To some extent the towns also act as employment centres. Though there are some manufacturing industries in both towns this is clearly tied up with their service role. Since females accounted for 58% of the total engaged in retail trades in 1961 in Great Britain as a whole (McClelland, 1966 , p.52), it would appear that the trend will be towards a higher employment of females than males in the two towns. With the increasing employment of males in the conurbations, trading estates and collieries of the east coast, it could well mean that in the future there will be a net outflow of male workers and a net inflow of female workers. The latter, however, depends on the strength of the service centre i.e. the number and range of services that it is able to provide.

Tied up with the dormitory role of the towns is the outward suburban movement of people from Tyneside/Wearside. During the 1951/61 decade there was very little movement into the towns from the conurbations. As Fig.B.1 shows the two towns were just on the fringe of the suburban growth zone. Within the last 5-6 years the towns have experienced a typical suburban growth with the construction of several large private estates. The influence of Tyneside/Wearside is very apparent in the new private estates.

Because of the relatively small sizes of the towns their spatial relations are mostly with areas within North Durham/Tyneside. Fig.B.2 shows the origin of vehicles, cars and commercial vehicles, which visited or terminated in Chester le Street on a sample day*. (The origin of the vehicle is the previous stopping point). Note that while the large majority of vehicles originated from within a radius of 6-8 miles of the towns there was a wider connection with most parts of County Durham. Also of note is the importance of Newcastle and the rest of Tyneside; the service element is indicated by the fact that half the vehicles from this area were commercial vehicles.

* Data extracted from files kept by the County Planning Office. The sample day was in December 1962.

In the following chapters of part B, the towns are considered under three broad headings:

(a) Employment

(b) Dormitory status

(c) Sphere of Influence

Throughout the chapters the emphasis is on the spatial interrelationship of the towns and the wider urban complex of North Durham/Tyneside. It is essentially a functional study of the towns as integral units in an interacting economic region. Relatively little emphasis, therefore, has been placed on the internal structure except where certain features have had a direct influence on the functions performed by the towns.

Chapter 2

Employment

In examining employment in the two towns the emphasis is first on the types of jobs available in the towns and the changes in their employment structure since the war. Dependent on the type and number of jobs available in the towns is the extent of the in and out movement of workers; these movements are next analysed. Finally the workplaces of employed residents of the towns are described; information on the workplaces of the residents was obtained from an examination of certain groups of workers: youths, coal miners, and council and private estate dwellers.

Employment Structure

Employment statistics are at present available only for the Employment Exchanges of the two towns (latest available figures are for June 1964). The Employment Exchanges of both towns are more extensive than their Urban districts; included in the Chester le Street E.E. are eight parishes in its rural district viz. Edmondsley, Gt.Lumley, Lt.Lumley, Lambton, Pelton, Sacriston and Waldridge; included in the Houghton le Spring E.E. are the whole of Hetton U.D. and the Burnmoor and South Biddick parishes of Chester R.D. The total population in 1961 of the Chester le Street E.E. was

36,764 and of the Houghton le Spring E.E., 52,254. The 1951 Census was the last to give any information on the occupational structure of the urban districts (see Table B.27 in the Appendix). The 1961 census was based on a 10% sample and both towns were considered too small to allow detailed analysis of occupations.

In the towns of Houghton le Spring and Chester le Street employment is mainly in the service industries, trades and professions. Notable exceptions are the Rodney Dresses factory in Chester le Street (employing over 400 women) and the Houghton Colliery (employing over 400 men).In the remaining parts of Chester le Street U.D. employment is mainly in coal mining at Chester Moor and Pelton Fell* collieries. In the rest of Houghton le Spring U.D. there are the Herrington colliery and the Fence Houses trading estate. In the rest of the Chester le Street and Houghton le Spring Exchanges (i.e. outside the U.D.'s) employment is chiefly in coal mining.

Table B.1 indicates that coal mining was by far the most important male occupation in both Exchanges, 33% of occupied males in Chester le Street's and 56% in Houghton le Spring's. The lower proportion for Chester le Street is largely because pit closures in the area have increasingly

* Note that this colliery was closed down in 1965.

Table B.1

Employment Exchanges

	Chester le Street			Houghton le Spring		
	Males %	Females %	Total %	Males %	Females %	Total %
Agriculture	1.7	1.1	1.6	1.6	1.2	1.5
Mining	32.5	0.4	22.4	55.8	4.0	43.1
Manufacturing	8.3	18.5	11.5	7.4	26.8	12.1
Building & Civil Engineering	17.9	0.7	12.5	12.1	1.2	9.4
Transport & Comm.	9.7	3.7	7.8	5.4	2.5	4.6
Distributive Trades	8.3	27.5	14.3	4.9	24.7	9.8
Prof.& Scientific services	10.1	25.1	14.8	8.0	19.6	10.9
Others	11.5	23.0	15.1	4.8	20.0	8.6
TOTAL WORKERS	7,262	3,309	10,571	11,283	3,670	14,953

forced the resident miners to travel to pits outside the Exchange. On the other hand, very few pits have been closed in the Houghton le Spring Exchange and the resident miners have continued to be employed locally. For instance, half of the miners resident in the town of Chester le Street work outside its Employment Exchange while for the town of Houghton le Spring the proportion is less than a quarter.

Excluding miners the Chester le Street exchange showed a relatively higher level of male employment than Houghton le Spring. This is clearly a reflection of the relative strength of the towns as service centres; Chester le Street with its wider range of services is able to employ a larger number of men than Houghton le Spring. Houghton le Spring has also traditionally offered fewer employment opportunities for women than Chester le Street and so occupied females formed only 24% of the total occupied population in its Exchange compared to 31% in Chester le Street's. The 1951 and 1961 censuses showed much the same differences between the urban districts.

Female employment is generally in the service industries and light manufacturers. In both Exchanges women outnumber men in three service groups: distributive trades, professional and scientific services and miscellaneous services (catering etc.). In Table B.1 the four service groups (rows 5-8) account for 67% of employed women in Houghton le Spring E.E. and 79% in Chester le Street E.E. The lower employment in services in Houghton le Spring is partly a consequence of fewer jobs but mostly because of the importance of the manufacturing group (27%). Manufacturing is the only group in which the number of females employed in the Houghton le Spring E.E. exceeds that of the Chester le Street E.E; this is because of the closure of the Stag Confectionery works in

Chester le Street and the presence of the Fence Houses trading estate in Houghton le Spring E.E.

Since the Second World War the most important change in the employment structure of Houghton le Spring and Chester le Street has been the decline in coal mining. In both towns there has been a decline in the number of resident coal miners as well as in the number employed at the local pits. For instance, the number of coal miners employed in the Chester le Street E.E. has been more than halved over the last 15 years from 5,940 to 2,360 (1949/64).

In both Chester le Street and Houghton le Spring U.D.'s there has been a significant addition of female employment since the war. This is partly due to the increasing percentage of females engaged in the service trades and partly due to the addition of factories specialising in female labour. In Chester le Street, however, the success of the Rodney Dresses factory was to some extent neutralized by the closure of the Stag Confectionery Works, established in the 19th century and for almost 75 years the town's largest single employer of female labour. In Houghton le Spring U.D. there has been the successful establishment (in 1947) and growth of a trading

estate at Fence Houses. The estate has a total acreage of 23.7 acres of which 16.4 have been built on or are committed (September 1966). By 1961 the numbers employed on the estate were 260 males and 621 females. The estate has continued to grow and this has especially been the case for females, the majority of whom are employed in the light manufacturing industries of the estate.* In September 1966 employment on the estate had risen to 283 males and 763 females.

In and out-movement of workers

The 1961 census showed that in both Chester le Street U.D. and Houghton le Spring U.D. there was a net loss of workers to other areas. The percentage of the economically active residents employed elsewhere is almost the same for both urban districts, 45% in Chester le Street and 42% in Houghton le Spring. There is, on the other hand, a significant difference in the in-movement of workers; in Chester le Street 40% of those employed locally were resident elsewhere but only 24% of those employed in Houghton le Spring.

The job ratios (i.e. employment in the area as a percentage of residents in employment) of the towns summarise the inward/outward movement of workers and demonstrate the

* Of the five factories on the estate two manufacture clothes, one cosmetics, one suitcases, and one wood-working machin-

superiority of Chester le Street as an employment centre. In 1961, the job ratio of all workers in Chester le Street was 91% and in Houghton le Spring, 76%. Chester le Street had a higher job ratio for both males and females but a markedly higher one for females; the female ratio was 113% in Chester le Street but only 67% in Houghton le Spring (see Table B.28 in the Appendix).

It is evident that Chester le Street offers more employment opportunities than does Houghton le Spring. In 1961, occupied females formed 32.6% of the total occupied population working in Chester le Street U.D. and 27.5% in the whole of County Durham. The situation in Houghton le Spring has been somewhat improved by the success of the Fence Houses trading estate but there is a limited range of jobs available for women at these factories and those seeking jobs in commerce are usually forced to seek employment outside the urban district (see 'Youth Employment' page 99).

Not only are there more job opportunities for females in Chester le Street but there appears to be a higher employment rate among the female residents. For instance, in 1961 occupied females formed 26.3% of the total occupied residents of Chester le Street U.D. but 24.3% in Houghton le Spring U.D. (in 1951 there was a 2.9% difference between

the towns). The 'stay-at-home' wife is still common in mining households; for instance, of the 42 mining households interviewed on the council estate in Chester le Street none had a working wife (note that the mining households on this estate may not have been representative of all mining households i.e. the wives may have been older). Houghton le Spring has a higher percentage of mining households and also a lower socio-economic status than Chester le Street.

There was very little change in the relative position of the two towns between 1951 and 1961 (see Table B.28 in the Appendix). There was generally a fall in the job ratio for both males and females. In Houghton le Spring, however, there was a rise in the male job ratio. The male job ratio rose from 69% in 1951 to 80% in 1961; this was the result of a slight fall in the out-movement of workers but mostly because of a rise in the in-movement of workers. It is difficult to account for this unusual trend since there has been no obvious addition of male employment in the urban district. The 1961 census gives no detail on the occupational structure of the urban district so that one has to assume that the exceptional rise has been caused by either the sampling error of the 1961 census or adventitious but temporary employment at this period e.g. the construction industry.

In-movement of workers

The total number of workers travelling into Chester le Street U.D. is approximately 2,800 and into Houghton le Spring U.D. approximately 2,200 (figures are based on the 10% sample of the 1961 census). In 1951 the totals were 3,170 and 1,710 respectively.

Chester le Street is completely surrounded by its rural district which lies roughly within a 3-mile radius of the town centre. In 1961 of those working in the town but resident elsewhere, 60% of the males and 72% of the females were enumerated in the rural district, no other administrative district accounted for as much as 10%. Houghton le Spring U.D. was the next most important district for workers travelling to Chester le Street; it accounted for 5% of the males and 9% of the females who were resident elsewhere. Between 1951 and 1961 the only significant changes were in the proportion of Chester le Street workers who were resident in the rural district (see Table B.29 in the Appendix); there was an increase in the percentage of females attracted from this area and a decrease in the percentage of males.

An analysis of the addresses of women employed at Rodney Dresses in Chester le Street showed that of the 411 women employed, 67% lived outside the urban district.

This is higher than the 1961 census figure (50% for females), but the high percentage is to be expected from this type of business which specializes in female labour and seems to be always in need of workers; there is a large and permanent neon sign advertising vacancies for women. Of the women employed at the factory but resident outside the urban district 62% lived in Chester R.D, 12% in Durham R.D. and 10% in Houghton le Spring U.D. (see also Fig.B.3(a)).

Before analysing the movement of workers into Houghton le Spring it is necessary to question the reliability that can be placed on the relevant data in the 1961 census. In the case of female workers resident elsewhere the sample is only 48 and for male workers it is 173. The discrepancy between the 1951 and 1961 censuses concerns Hetton U.D.(see Table B.30 in the Appendix). In 1951, 38% of the male workers and 49% of the female workers resident elsewhere lived in Hetton U.D. In 1961, the comparable figures were 3% and 2% respectively. There appears to be no accountable reason for such a dramatic change, except the sampling error. For instance, an analysis of the addresses of miners employed at the two collieries in Houghton le Spring U.D. (mid-1964) revealed that 168 men lived in Hetton U.D. and these formed 38% of those who lived outside the urban district. It is also likely

that coal mining would have accounted for about one-third of employed males in Houghton le Spring U.D. in 1961.

In fact the origin of miners employed in the urban district (mid-1964) compares favourably with the 1951 census. The only significant difference is that for Sunderland, 30% of miners resident elsewhere but only 16% of males resident elsewhere in 1951. It is not, of course, possible to explain this difference though it is likely that mining would be the chief employment in Houghton le Spring of those who travel from Sunderland; the overall percentage for all occupations would, therefore, be reduced. For instance, all 134 of the miners resident in Sunderland worked at the Herrington colliery which is barely two miles from the outer housing estates in Sunderland. (see also Fig.B.3(b) showing the residence of miners employed in Houghton le Spring U.D.)

Out-movement of workers

In addition to the employment opportunities available within the urban districts, there are several employment centres within easy reach of the towns. Employment outside the districts is concentrated at:

(a) Collieries

(b) Trading estates

Chester le Street is within easy reach of two large estates, Birtley/Barley Mow (2 miles) and Team Valley (7 miles) as well as several smaller estates in Tyneside. Houghton le Spring is near to the large estates of Sunderland e.g. Pallion.

(c) The port conurbations. The commercial centres of Tyneside and Wearside are becoming increasingly important and accessible. Chester le Street is only 8-9 miles from Newcastle/Gateshead while Houghton le Spring is 5-6 miles from the centre of Sunderland.

In Chester le Street U.D. in 1961, 45% of occupied males and 43% of occupied females worked elsewhere. The chief employment centres were in the rural district which accounted for 52% of the males and 38% of the females who worked elsewhere. Newcastle was the next most important centre and attracted 13% of the men and 22% of the women who worked elsewhere; Gateshead (includes Team Valley trading estate) attracted 10% of the men and 16% of the women.

There was little overall change in the journey to work pattern during the previous intercensal period; though there were small changes in the percentage employed at particular centres. In male employment there was a small drop in the percentage working in the Chester R.D. (possibly

because of the decline in coal mining) and a small rise in the percentage working in Newcastle and Gateshead. Female employment showed exactly the reverse trend and there was an increase in the number employed in Chester R.D. and a decrease in employment in Newcastle and Gateshead. This may be because of increased employment in the Birtley/ Barley Mow estate or simply a sampling variation (the sample included only 87 women who worked elsewhere).

A traffic survey carried out in May 1963 by the County Planning Office indicated the orientation of Chester le Street to employment centres along the A.1 and to the east of it (the growth area of the Hailsham Report). Note that questionnaires were distributed only to households within the old part of the town i.e. east of the railway line and south of the Cong Burn. At least 54% of all journeys were directly north, towards Birtley/Barley Mow, Team Valley, Newcastle and the rest of Tyneside. A further 10% were in a north-easterly direction (also a link road to the A.1); 22% were in an easterly or southerly direction while only 14% were to areas west of the town. This pattern of movement is not likely to be different to that generated by the council estates outside the survey zone, though it is likely that on the private estates there will be a greater movement to the north of the town and a smaller movement to the west.

In Houghton le Spring U.D. 40% of occupied males in 1961 and 50% of occupied females worked outside the urban district. Compared to Chester le Street there was a smaller percentage of males working elsewhere and a higher percentage of females. The higher male employment within Houghton le Spring U.D. was because of the flourishing state of the local collieries while the lower female employment was mostly a result of fewer service jobs.

Of the occupied males working elsewhere, 23% worked in Chester R.D., 17% in Sunderland, 15% in Hetton U.D. and 10% in Washington U.D; except for those working in Sunderland the majority of these workers were probably miners. Compared to 1951 there was a sharp drop in the percentage working in Chester R.D. (39% in 1951) and an increase in the percentage working in Sunderland (12% in 1951); the decrease in Chester R.D. can be attributed to the decline of coal mining in that area.

Sunderland was by far the most important centre for females who worked elsewhere, 54% in 1961. This was a marked increase over the 1951 figure of 33%. The only other important employment centre for women in 1961 was Washington U.D. (14%) but like all other centres (excluding Sunderland) it attracted a lower percentage of workers than in 1951.

Coal miners

In spite of the steady decline in the number employed in the industry, coal mining is still the most important male occupation in both urban districts. Approximately one-fifth of occupied males resident in Chester le Street U.D. and one-third in Houghton le Spring U.D. are coal miners*. In 1951 the comparable figures were 40% for Houghton le Spring and 32% for Chester le Street.

A concomitant of the N.C.B.'s policy of closing down the less economic mines has been the growing number of miners that are forced to travel an increased distance to work. The survey in 1964 showed that this was particularly evident in Chester le Street U.D. where there had been a recent closure of one of its collieries (South Pelaw, Jan, 1964) and declining employment in the remaining two collieries (of these Pelton Fell was subsequently closed in early 1965). Thus 72% of coal miners resident in Chester le Street U.D. worked elsewhere compared to 40% of those in Houghton le Spring U.D. Fig.B.4 shows the workplaces of miners resident in Chester le Street U.D. and Houghton le Spring U.D.

* These estimates are based on data obtained in a survey of all collieries in County Durham during 1964. The survey was carried out by R.E.Hebden of Bede College, Durham.

Table B.2

COAL MINERS

Workplace of Chester le Street U.D. miners

	All Miners %	Working outside U.D. %
Chester le Street U.D.	28.1	-
Chester le Street R.D.	42.6	59.2
Sunderland C.B.	6.5	9.0
Stanley U.D.	4.7	6.6
Houghton le Spring U.D.	1.2	1.7
Washington U.D.	1.8	2.4
Durham R.D.	1.0	1.3
Rest of Co. Durham	14.2	19.7
TOTAL	100% = 1142	821

Of the Chester le Street miners working outside the urban district, 59% worked in nine collieries of its rural district. The closure of the South Pelaw colliery had resulted in the mass transfer of miners to two of the large coastal collieries, Wearmouth (Sunderland) and Westoe (South Shields); together these two collieries employed 23% of the miners who worked elsewhere. Craghead (Stanley U.D.) was the only other colliery employing a significant number of Chester le Street miners. See Table B.2.

Table B.3

Workplace of Houghton le Spring U.D. coal miners

	All Miners %	Working outside U.D. %
Houghton le Spring U.D.	59.9	-
Chester le Street R.D.	17.2	42.8
Hetton U.D.	7.7	19.2
Sunderland R.D.	7.7	19.2
Washington R.D.	3.2	8.1
Durham R.D.	1.0	2.5
Easington R.D.	1.3	3.2
Rest of County Durham	2.0	5.0
TOTAL	2917	1170

The majority of the miners resident in Houghton le Spring U.D. are employed in the large collieries in the immediate area. Of those who worked elsewhere four-fifths are employed in four nearby collieries, Harraton and Lumley 6th (Chester R.D.) Eppleton (Hetton U.D.) and Silksworth (Sunderland R.D.). Chester R.D. attracted 43% of such miners and Hetton U.D. and Sunderland R.D. each attracted 19%. Glebe colliery (Washington U.D.) was the only other significant employer of Houghton le Spring miners. See Table B.3.

Youth employment

Information on youth employment was obtained for each education district for the year October 1962/63. In each case the education district extended beyond the urban district; Chester le Street U.D. andR.D. comprised one district while the Houghton le Spring district was made up of the two additional urban districts of Washington and Hetton. Employment statistics are normally broken down into 'local' (education district) and 'other' areas. In the case of Houghton le Spring, the area covered by the education district was considered unsuitable for any meaningful analysis and it was decided to extract the required information from the actual files for a smaller area; the information was limited to those youths who were resident in Houghton le Spring U.D. Data on the two districts are, therefore, not comparable. It is important to point out that the youths dealt with by the Youth Employment Bureau are normally from Secondary Modern Schools; Grammar School leavers form about 15% of those included in this survey.

In the Chester le Street Education District, 91% of girls obtained employment in the 'local' area. From information available it would appear that Chester le Street and Birtley/ Barley Mow accounted for nearly all the locally employed girls.

Chester le Street probably employed at least two-thirds of the locally employed girls; 34% of whom were employed at Rodney Dresses, a further 31% as shop assistants and 12% as clerks; the large majority of the shop assistants and clerks would have been employed in Chester le Street. Employment outside the 'local' area was very small (9%) and was mostly in Team Valley.

Although 87% of boys found employment in the 'local' area there was less concentration of employment in Chester le Street and Birtley/Barley Mow. This was mainly because of the large number of apprentice miners (22%) but also because of the many ubiquitous trades entered into by boys e.g. labourers (16%) and numerous bricklayers, painters etc.

In Houghton le Spring U.D. the majority of youths found employment within the urban district. Of the 361 boys and girls resident in the urban district, 56% found employment in the urban district (cf. 58% of all occupied residents in 1961 census). The percentage of girls working locally (59%) was higher than that of boys (52%).

Table B.4 showsthat whereas boys found employment over a wide area, employment for girls was concentrated at a few places; this is mostly because of differences in the

Table B.4

Houghton le Spring U.D. : Youth employment

Workplace	Boys %	Girls %	Total %
Houghton le Spring U.D.	52.3	59.2	55.7
(Houghton le Spring)	(17.1)	(19.6)	(18.3)
(Fence Houses)	(8.8)	(34.6)	(21.6)
Sunderland C.B.	15.9	25.2	20.4
Newcastle C.B.	1.1	2.2	1.7
Washington U.D.	9.9	5.0	7.5
Other areas	20.9	8.4	14.7
TOTAL occupied	182	179	361

type of employment entered into by boys and girls. The chief occupations of girls, in order of importance, were: machinists (usually in clothing factories), shop assistants and clerks. The occupations taken up by boys were of a much wider range and included apprenticeships in mining and skilled trades as well as unskilled jobs like labouring.

Employment for girls was mainly at three centres : Fence Houses, Sunderland and the town of Houghton le Spring (i.e. main built-up area); together these three centres employed 80% of the girls but only 42% of the boys. The scatter of male jobs is brought out by the percentage employed in Houghton le Spring U.D. but outside Fence Houses and the

town of Houghton le Spring, 26% of the boys but only 5% of the girls.

Employment within the urban district was mainly at Fence Houses and Houghton le Spring. Employment at Fence Houses is chiefly in the trading estate where the majority of jobs are for girls; thus 35% of the girls obtained employment there compared to only 9% of the boys. The presence and success of the trading estate are undoubtedly strong factors helping to correct the imbalance in the male dominant employment structure of the urban district. The town of Houghton le Spring is not a strong employment centre and employed only 17% of the boys and 20% of the girls resident in the urban district. The small shopping centre and few commercial establishments are unable to attract a large number of workers; for instance, of those resident in the urban district but outside the main built-up area of Houghton le Spring only 5% of the boys and 15% of the girls were employed there.

Outside the urban district the chief focus of employment was Sunderland; 25% of the girls and 16% of the boys were employed there. The 1961 census showed similar out movements to Sunderland and as with youth employment there was a greater attraction of females than males both in absolute numbers and relative to the total number employed

in each group. Those seeking jobs in Sunderland were mostly those employed in commerce; of the 45 girls who found employment in Sunderland, 22 were shop assistants and 16 were clerks (40% and 47% respectively of all those who were so occupied).

Workplaces of residents on Council and private estates

It was felt that the study of the journey to work should be carried beyond the limits set by the character of the census data and the special aspects of the employment of coal miners and youths. Further information on the workplaces of residents of the two towns was, therefore, obtained from several surveys of housing estates and housing files of council tenants.

In Chester le Street the workplaces of residents of three private estates were found out by interview surveys. Two of these estates, Garden Farm and Hilda Park estates, were within the urban district while the third, North Lodge estate, was beyond the administrative boundary but formed a geographical part of the town. A similar survey was also made of the 250 most recent houses on the West Lane Council estate. Information on the work places of the heads of households of the 200 most recent council tenants (June 1965)

was also obtained from the council housing files.

In Houghton le Spring U.D. a survey was made of a private housing estate at Penshaw, the Whitefield estate, since there were no suitable private estates nearer the town of Houghton le Spring during the time when fieldwork was possible. It was felt after the survey in Chester le Street that little would be gained by an interview survey of a council estate and so the only other information obtained was from the council housing files concerning the workplaces of the 300 most recent council tenants (May 1965) on the Burnside estate, half a mile from the town centre of Houghton le Spring.

Nearly all the residential development in the two towns since the war has been in the form of estates, council and private, and it appears that this will be the pattern in the future. The workplaces of residents on the two types of estates are, therefore, compared in order to understand the nature and trend of the journey to work pattern of the residents of the two towns.

It must first be noted that the occupations of council tenants differ markedly from those of the owner-occupiers of private estates. For instance, in Chester le Street 22% of employed males on the council estate worked at

collieries compared to only 6% on the three private estates. In the Penshaw estate it was found from an analysis of the occupations of heads of households that only 4% of households were of the lower working class (unskilled manual workers, including coal miners) while the other households were equally divided between upper working class (skilled manual workers) and lower middle class (lower-grade professionals and clerical workers)*. Although households in the Chester le Street estates were not asked to state their occupations, an examination of the housing files for the Hilda Park estate showed that the occupation structure of the residents was practically the same as that of the Penshaw estate which was also developed by the same firm.

(a) Chester le Street

In the following analysis the North Lodge estate is excluded since it is felt that the other two private estates are more comparable with the council estate in location and period of occupancy. The Garden Farm, Hilda Park and West Lane estates were all occupied 1963/64 whereas the North Lodge estate was occupied c.1960. Employment on the North Lodge estate is, however, shown in Table B. 31 in the Appendix. From the table it can be seen that the

* classification into social classes was based on that used by the Registrar General.

only significant difference between this estate and the other two private estates is in the percentage employed in Chester R.D. (the large majority in the Birtley/Barley Mow trading estate). Because of the proximity of the North Lodge estate to Birtley there was a relatively high proportion of households that previously lived there and a correspondingly high percentage that worked there. The high employment in Birtley/Barley Mow also accounts for the relatively low percentage employed in Tyneside.

There are three important employment centres for workers in both council and private estates; these are, Chester le Street, Birtley/Barley Mow and Tyneside. Although employment in Chester R.D. is mainly at Birtley/Barley Mow, many coal miners are employed at collieries in other parts of the rural district. There is also a wide scatter of employment centres on Tyneside, but the large majority are employed at Newcastle and Team Valley trading estate (Gateshead C.B.). (See also Fig.B.5)

Fig.B.5 shows that there is a greater local concentration of workplaces on the council estate, the majority of which are in the Chester le Street U.D. and R.D. Table B.5 shows that in the council estate 35% of all workers were employed in Chester le Street U.D. and 27% in the rural district, compared to 17% and 10% respectively of the workers

on the private estates. Tyneside, on the other hand, was particularly attractive for workers on the private estates, 47% of such workers compared to only 21% of those on the council estate. A small but significant number of workers on the private estates are Area Representatives or other area workers; these formed 5% of all employed persons on the private estates but only 1% on the council estate.

Table B.5

All employed persons - Chester le Street Estates

Workplace	Previous residence: Chester le Street		Elsewhere		All households	
	Council Estate %	Private Estates %	Council Estate %	Private Estate %	Council Estate %	Private Estate %
Chester U.D.	34.9	35.9	36.3	10.2	35.4	17.2
Chester R.D.	26.9	14.1	27.4	9.0	27.1	10.4
Newcastle	10.8	17.4	4.9	33.1	8.9	28.8
Gateshead	7.1	9.8	7.8	14.7	7.3	13.4
Rest of Tyneside	3.8	4.3	5.9	5.3	4.5	5.0
Durham MB	3.3	6.5	1.0	5.3	2.5	5.6
Sunderland	2.4	3.3	4.9	3.7	3.2	3.6
Rest of Co.Durham	8.4	8.7	9.8	10.9	8.9	10.4
Others	2.4	-	2.0	7.8	2.2	5.6
TOTAL	212	92	102	245	314	337

N.B. North Lodge private estate is excluded.

On private estates the workplaces of households that originated from Chester le Street (i.e. previously lived in Chester le Street before moving to the estate) differ significantly from those of households that previously lived outside Chester le Street. On the other hand, the workplaces of council tenants who originated from outside Chester le Street do not differ significantly from those of the 'Chester le Street' tenants; if anything, they may be expected to show an even greater local orientation of employment since qualification for a council house is dependent on either residence or employment within the urban district, there was, however, no significant difference between these households on the West Lane estate.

The 'Chester le Street' private households (i.e. previously lived in Chester le Street) are more locally employed than the 'outside' private households (i.e. previously lived outside Chester le Street). Whereas Chester le Street U.D. and R.D. employed 36% and 14% respectively of workers in the 'Chester le Street' households, the comparable figures for the 'outside' households were only 10% and 9%. Tyneside, on the other hand, accounted for 53% of workers in the 'outside' households but only 32% in the 'Chester le Street' households (see Table B.5). A

further indication of the orientation of employment away from the local area in the 'outside' households is the fact that area workers formed 6% of all employed persons in those households but there was none among the 'Chester le Street' households.

The workplace pattern of 'outside' private households differed markedly from that of the council estate but there was a much smaller difference between the 'Chester le Street' private households and the council households. The major differences between the 'Chester le Street' private households and council households werein the percentages employed in Tyneside and Chester R.D; 'Chester le Street' households showed a higher attraction to Tyneside and a lower attraction to the rural district. Differences in the percentages employedin Tyneside and Chester R.D. can be attributed to differences in the socio-economic status of residents of the two estates. Employment in Chester le Street R.D. is mainly for skilled and unskilled manual workers and these form the majority of employed persons on the council estate.

The workplace of females relative to males is broadly similar in both council and private estates. In both estates there is a higher percentage of women than men working in Chester le Street U.D. and Tyneside. There are,

Table B.6

Chester le Street - Estates

Workplace	MALES Council Estate %	MALES Private Estates %	FEMALES Council Estate %	FEMALES Private Estate %
Chester U.D.	30.9	15.4	52.3	23.1
Chester R.D.	33.3	11.2	3.1	7.7
Newcastle	7.2	27.4	15.4	33.3
Gateshead	6.0	13.9	12.3	11.5
Rest of Tyneside	5.2	5.4	1.5	3.8
Durham MB	2.4	5.8	3.1	5.1
Sunderland	2.8	4.6	4.6	-
Rest of Co. Durham	10.2	10.1	4.6	11.7
Others	2.0	6.2	3.1	3.8
TOTAL	249	259	65	78

however, significant differences between the workplaces of women on the private estates and those on the council estate (see Table B.6).

For women on the council estate Chester le Street U.D. (52%) was the most important employment centre while for those on the private estates Tyneside (49%) was the major employment area. Although there would almost certainly

be differences between the occupations of women on the council estate and those on private estates, it would seem that the great disparity between estates, in the percentages employed locally and in Tyneside, is to a large extent misleading. This is because a large percentage of the occupants of the private estates are young married couples who have lived previously in Tyneside; on moving to the estate the wife merely continues to work in her 'local' area. Thus of the 'Chester le Street' private households 46% of occupied women worked in Chester le Street U.D. compared to only 13% of those in 'outside' households. Employment was correspondingly low in Tyneside for women in 'Chester le Street' households (25%) and higher for women in 'outside' households (59%).

Employment for men on the council estate was chiefly in the local area, Chester le Street U.D. (31%) and Chester le Street R.D. (33%); outside the local area Tyneside (18%) was the most important employment centre. On the private estates these centres were in reversed order of importance: Tyneside (47%) was by far the most important centre while Chester le Street U.D. (15%) and R.D. (11%) were the two other centres of note. As in the case of female employment the previous residence of households on the private estates was a significant factor affecting the place of

employment. Thus in the 'Chester le Street' households, 32% of employed males worked in the urban district compared to only 9% of those in the 'outside' households.

It will be noticed that the percentage of employed persons working in Chester le Street R.D. is consistently below the 55% suggested by the 1961 census (58% in 1951). This is particularly conspicuous in the council estate which would normally be expected to exceed the average for local employment. There are several possible reasons for this:

(a) there was very little post-war private housing development before 1961 within the urban district; conditions that are now present in these estates would not, therefore, have been reflected in the census.

(b) Employment in the urban district had declined since the census year, particularly for men; the South Pelaw colliery had closed and employment had declined considerably in the other two pits. The Stag Confectionery works had also closed after 1961.

(c) The census included the rest of the urban district viz. Pelton Fell and Chester Moor. These are almost exclusively mining settlements and the large majority of these miners would have worked in the local pits i.e. within the U.D. For instance, in 1964, 66% of the

miners resident in the two settlements worked at collieries within the urban district; the percentage would certainly have been higher in 1961 when the pits employed more men.

(b) Houghton le Spring

In Houghton le Spring U.D. the only large private estate completed and occupied by the end of 1964 was at Penshaw (occupied 1963-64). The employment structure of this estate is examined below, but because of its situation at the northern limit of the urban district (3 miles from the town centre at Houghton le Spring and 4-5 miles from Sunderland) it does not reflect average conditions in Houghton le Spring and so the Burnside council estate is described first.

The workplaces of heads of households was obtained from the council housing list for the 300 most recent council tenants on the Burnside estate. Of those that were employed, 63% worked within the urban district, 7% in Sunderland, 7% in Hetton U.D. and 2% in Tyneside (see Table B.7). The workplace pattern of heads of households on the council estate was almost exactly the same as that for males in the 1961 census. The higher local employment among heads of households on this estate compared to the West Lane estate in Chester le Street can be explained by the higher employment at the local collieries.

Table B.7

Workplaces of heads of households

	Council Burnside Estate %	Private Penshaw Estate %
Houghton le Spring U.D.	63.3	5.4
Sunderland C.B.	6.8	63.9
Tyneside	1.9	10.0
Washington U.D.	2.9	3.1
Hetton U.D.	7.2	0.4
Rest of Co.Durham	17.9	8.0
Others	-	9.2
TOTAL occupied	207	260

The employment structure of the Penshaw estate was totally different; 64% of employed heads worked in Sunderland, 10% in Tyneside and only 5% in Houghton le Spring,U.D. The low attraction of the local area was emphasised by the fact that 4% of the heads were area workers and a further 4% were in the merchant navy.

On the Penshaw estate as in the case of the private estates in Chester le Street, there was a higher percentage of women than men employed in the conurbation and locally. Thus Sunderland attracted 81% of employed women compared to 64% of employed men. The local area, Houghton le Spring U.D.

was unable to attract many of the estate workers but, nevertheless, 8% of employed women worked in the urban district compared to 5% of the employed men. Table B.8 also shows that the previous residence of the household was an important factor determining the workplace of both males and females.

Table B.8

Penshaw Estate - WORKPLACES

	MALES			FEMALES			All Employed		
	Previous residence			Previous residence					
	S'land	elsewhere	Total	S'land	e'where	Total	S'land	e'where	Tot
S'land	72.7	46.6	64.0	88.6	61.5	80.5	76.8	50.0	68.1
Tyneside	8.0	13.6	9.9	4.9	7.7	5.7	7.2	12.3	8.8
Houghton U.D.	1.1	12.5	4.9	3.3	19.2	8.0	1.6	14.0	5.7
Washington U.D.	0.6	8.0	3.0	-	3.9	1.2	0.4	7.0	2.5
Rest of Co.Durham	7.4	10.2	8.3	1.6	7.7	3.4	5.9	9.7	7.1
Others	10.2	9.1	9.9	1.6	-	1.2	8.1	7.0	7.7
TOTAL	176	88	264	61	26	87	237	114	351

Chapter 3

Dormitory status

Both Houghton le Spring and Chester le Street are expected to become increasingly residential. Little industrial development is expected to take place in either town and they will continue to function in the twin role of residential and service centres. Employment for the residents will be concentrated in the port conurbations, Tyneside and Wearside, and on industrial estates; coal miners will be expected to travel in increasing numbers to the long-life collieries of the east coast. Already these employment trends are to be observed in the two towns.

In Chester le Street development along these lines dates back to the last decade before the Second World War when the Local Authority sold some of its land for development by owner-occupiers; previously inter-war housing was virtually restricted to council dwellings for the working class. The rapid construction of houses for owner-occupiers immediately after the land was sold (about 500 in five years) showed that there was already a considerable demand for such houses. In its zeal to develop Chester le Street as a residential area for the industrial areas of Tyneside and Wearside, the Local Guide of 1934 boasted that

Chester le Street was:

'the most attractive place to live in between Newcastle and Durham. It is also the best shopping centre between Newcastle and Darlington'.

Post-war residential development

Since the war 2,700 houses have been built in Chester le Street U.D. and 3,800 in Houghton le Spring U.D.* Bearing in mind the relative sizes of the two urban districts it appears that Houghton le Spring has been more successful than Chester le Street in building council houses (3,000 against 1,000) but has attracted fewer private houses (800 against 900).

Residential development in the main built-up area of Chester le Street (i.e. 'town') has far exceeded that in the main built-up area of Houghton le Spring. In Chester le Street there were 1,470 council houses and 1,330 private houses; the latter includes 430 private houses which have been built to the north of the town in an area which is a physical part of the town but administratively lies within the rural district (this area includes the North Lodge estate).

* includes houses built before November, 1966.

In Houghton le Spring there have been 990 council houses and 400 private houses.

Of special interest is the recent rapid increase in the number of private houses. This trend has been apparent nationally since the second half of the 1950's but in the Houghton le Spring/Chester le Street area this has been a phenomenon of the 1960's and is directly associated with the increasing involvement of the two towns in suburban movements from Tyneside and Wearside.

This can be seen from a comparison of the number (and percentage) of private and council houses which have been built during the 7-year period since the war.

Houses built since the war

	Chester le Street U.D.				Houghton le Spring U.D.			
	Council	(%)	Private	(%)	Council	(%)	Private	(%)
1960-66	490	(28)	760	(81)	670	(21)	610	(74)
1953-59	780	(44)	90	(10)	1110	(36)	150	(18)
1946-52	500	(28)	80	(9)	1340	(43)	70	(8)
TOTAL	1770		930		3120		830	

Note the post-1960 decline in council housing relative to the number of private houses constructed and to the number constructed in the two earlier periods.

Chester le Street was the first to be developed for owner-occupiers; this first occurred in the 1930's but there

was a post-war fall off and construction only began again in earnest after 1960. By 1961 there had been very little private development in Houghton le Spring and owner-occupiers formed only 26% of all households in the urban district compared to 36% in Chester le Street U.D. Three-quarters of all post-war private houses in Houghton le Spring U.D. were in fact completed in 1963 or later; the number completed in 1966 alone was one-third of all post-war private houses. The hitherto low rate of private housing development in Houghton le Spring U.D. can be attributed partly to the priority given to Local Authority housing by local councillors and to Sunderland's excellent post-war record in building council houses; but also to the fact that the more attractive areas closer to the centre of Sunderland (e.g. Boldon U.D. and Sunderland R.D.) have now been developed and there is no scope for further large scale estates; there is every likelihood that there will be a rapid increase in development in the future.

Fig.B.6(b) shows the location of post-war residential development in the main built-up area of Chester le Street. Residential development has mainly taken place in two parts of the town, the north and the south-west.

In the north of the town (i.e. north of the Cong Burn) there are 1260 post-war houses, including those in the rural

district; there are 510 council and 750 private houses. This is an especially attractive part of the town for private developers since the area is ideally suited for commuting to Tyneside or Birtley/Barley Mow (cf. the development of the Picktree estate in the 1930's, see page 69). Three large private estates have been built in this area within the last 5-6 years, Hilda Park (200 houses), North Lodge (170 houses) and McCullough's (170 houses). The main post-war council estates in this part of the town are at South Pelaw (340 houses) and Northlands (90 houses).

In the south-west of the town there are 1230 post-war houses (770 council and 460 private houses). The largest council and private estates are west of the railway line and south of West Lane. The largest private estate is the Garden Farm estate (400 houses); there are firm plans to extend this estate by at least 200 houses within a few years. There are two other small private estates, Orchard Gardens (35 houses) and Hermitage Park (25 houses), which lie between the railway line and Front Street; the houses on these two estates are larger and more expensive than those on the other private estates in the town. The West Lane estate (770 houses) is the largest post-war council estate in Chester le Street, it is directly south of the Bullion Lane

estate which was built during the inter-war period.

Residential development in other parts of the town has been fragmentary and is invariably an infilling process. For instance, 140 council houses have been attached to the Bullion Lane estate while there are two other small council estates to the east of Front Street, Beverley Gardens (22 houses) and York Terrace (38 houses). There have been three small private developments at Hopgarth (42 houses), Queens Park (22 houses) and Lindisfarne (11 houses); the last two are the completion of estates begun in the 1950's. There are only two parts of Chester le Street which can be residentially developed and there are firm proposals to develop both areas. The first is the extension of the Garden Farm Estate and the other is the extension of the Bullion Lane Estate; both estates are to be extended further west to the urban district boundary.

Fig.B.6(a) shows that there have been two large council estates built in the town of Houghton le Spring since the war. About 500 houses were added to the Racecourse estate while 400 houses were built at Burnside. A small council estate (90 houses) was built in the Market Place as part of the redevelopment of that area.

The three post-war private estates in Houghton le Spring are all to the south-west of the town. The Dairy Lane (185

houses) and Durham Road (115 houses) estates were nearing completion at the end of 1966; the third estate is at Gillas Lane (100 houses). The south-west quadrant of Houghton le Spring was until recently the only undeveloped area near the town centre (see Plate B).

Previous residence of estate dwellers

New council tenants are almost invariably already resident in the urban district. Of the 300 most recent council tenants on the Burnside estate only 2 were from outside Houghton le Spring U.D. In Chester le Street, 16% of the council tenants on the West Lane estate were from outside the urban district, the large majority of these were from Chester R.D. The previous residence of households on the private estate is, however, of special interest. In both Houghton le Spring and Chester le Street the most significant characteristic was the high percentage of households that had previously lived in Tyneside and Wearside. A smaller but significant percentage of households had previously lived in areas outside County Durham and Tyneside.

In the Chester le Street estate (excluding North Lodge) 29% of all households had previously lived in Tyneside.

Table B.9

Chester le Street Private estates

Place of previous residence

	%
Chester le Street U.D.	25.9
Chester le Street R.D.	8.1
Tyneside	29.3
rest of Co. Durham	21.9
Elsewhere	14.8
TOTAL households	270

It is interesting to note that as many as 15% of the households had previously lived outside County Durham and Tyneside.

Table B.10

Houghton le Spring - Private estate

Previous residence	Penshaw estate %
Sunderland C.B.	65.4
Houghton le Spring U.D.	9.0
Tyneside	5.3
Rest of Co.Durham	12.8
Elsewhere	7.5
TOTAL households	266

It is clear from Table B.10 that the Pensnaw estate has been formed by outward suburban movement from Sunderland. The Sunderland Green Belt runs from the town's boundary to within a mile of the estate and this has enhanced its attractiveness. As a result, 65% of the estate's households had previously lived in Sunderland C.B. while a further 5% lived in administrative areas adjacent to the C.B. but which are now within the town's built-up area. Another 5% of the households had previously lived in Tyneside while there were relatively few households from Houghton le Spring U.D. (9%).

Previous residence and workplace
(private estates)

A direct consequence of the outward suburban movement from the conurbation to private estates in the area is the return journey to work in Tyneside and Wearside. Often there is a rationalization of workplace and residence, e.g. a movement of place of residence from the north side of Tyneside by those employed on the south side, but in the majority of cases movement to the suburbs is not directly related to travel convenience.

(a) Chester le Street

The influence of Tyneside is by far the most important element to be considered. Taken as a whole, the Tyneside conurbation is the most important area from which the estate households migrated (see Table B.9) and it is also the most important employment centre for the heads of all households (see Table B.11). The workplace pattern of 'Tyneside' households, i.e. previously lived in Tyneside, and the influence of Tyneside on households that previously lived outside Tyneside are here examined. Only the place of employment of heads of households is considered since this would presumably be the most important employment factor affecting the decision to move to the estates.

Table B.11 shows the influence of previous residence on the place of employment. Tyneside attracted 34% of employed heads of 'Chester le Street' households but 51% of 'outside' households. Regardless of the previous place of residence Tyneside exerts a strong attraction for all employed heads of households. Table B.12 shows that although employment in Tyneside was highest for 'Tyneside' households, the percentage of other heads of households employedthere was significantly high; about one-third.

Table B.11

Chester le Street - Private estates

Employed heads of households

Place of employment	'Chester le Street' households	'Outside' households	All households
	%	%	%
Chester le Street U.D.	32.4	9.4	15.4
Chester le Street R.D.	14.7	10.4	11.5
Tyneside	33.7	50.5	46.1
(Newcastle)	(17.6)	(30.7)	(27.3)
(Gateshead)	(10.2)	(15.1)	(13.8)
Sunderland	4.4	4.7	4.6
Rest of Co.Durham	14.8	16.7	16.2
Elsewhere (includes other workers)	-	8.3	6.2
TOTAL occupied	68	192	260

Table B.12

Chester le Street - Private estates

Employed heads of households

Previous residence	% employed in Tyneside %
Tyneside	78.4
Chester le Street	33.3
Rest of Co.Durham	32.1
Elsewhere	33.3
ALL households	46.1

For the 'Chester le Street' households employment outside Tyneside was mainly within the Chester le Street U.D. and R.D., 30% and 17% respectively. For households that previously lived outside County Durham or Tyneside ('elsewhere' in Table B.12), Tyneside was the most important centre. A significant percentage of the employed heads of these households (22%) were area representatives but proximity to Newcastle was for many of these an important factor.

Table B.13

Chester le Street - Private estates

Previous residence of heads of households employed in Tyneside

Previous residence	%
Tyneside	49.2
Chester le Street U.D.	17.8
Rest of Co. Durham	22.0
Elsewhere	11.0
TOTAL employed	118

N.B. Compare with Table B.9

As Table B.13 shows, almost half of those employed in Tyneside had previously lived there. The reason is made clear by Table B.14 which shows the workplaces of all employed

heads of 'Tyneside' households. The large majority of heads of 'Tyneside' households (78%) continued to work in Tyneside; Chester le Street employed only 3% while 11% were either area workers or worked outside Co. Durham or Tyneside.

Table B.14

Chester le Street - Private estates

Employed heads of 'Tyneside' households

Workplaces	%
Tyneside	78.4
Chester le Street U.D.	2.7
Rest of Co. Durham	8.1
Area workers	5.4
Others	5.4
TOTAL employed	74

(b) Houghton le Spring

Sunderland dominated the Penshaw estate to an even greater degree than Tyneside dominated the Chester le Street estates. The majority of residents on the Penshaw estate had previously lived in Sunderland and were also employed there. Table B.15 shows that 73% of occupied heads of 'Sunderland' households, i.e. previously lived in Sunderland,

were employed in Sunderland; Tyneside (8%) was the only other important employment centre for these households. A further 4% were area representatives. (Houghton le Spring accounted for less than 1%).

Table B.15

Employment of heads of households
Penshaw Estate

Workplaces	'Sunderland' households %	'Other' households %
Sunderland	72.7	46.6
Tyneside	7.6	14.8
Rest of Co. Durham	10.4	29.6
Area workers	4.1	3.4
Others	5.2	5.6
TOTAL employed	172	88

The dominance of Sunderland was such that 47% of 'non-Sunderland' households were also employed in the town. Tyneside (15%) was the next most important centre while the majority of the other heads of households were employed in a wide scatter of centres, mostly in north-east Durham. (Because of the inclusion in the 'non-Sunderland' group of those households that had previously lived locally, Houghton le Spring U.D. accounted for 11% of the employed heads of these households).

Reasons for moving to the private estates

It is interesting to see what motivating factors were most important in the decision to move to the private estates in the two towns. There would seem to be three broad groups of reasons which account for migration:

(i) economic or job considerations

(ii) the influence of friends and relatives

(iii) conditions relating to goodness of living but excluding the above e.g. housing (see Turner, 1949).

Economic or job considerations tend to be most important in long-distance migration; for instance, the high percentage of area representatives among those that previously lived outside the county and Tyneside. The present study is, however, more concerned with short-distance migration (primarily movement from the central zones of cities to the suburbs) and one would expect conditions relating to goodness of living to be the dominant factors.

Reasons given by householders in the Chester le Street and Houghton le Spring estates were rather similar. Differences between the estates of the two towns were evidently the result of differences in (a) the location of the estates relative to Tyneside and Wearside, (b) the percentage of households that previously lived in Tyneside/

Wearside, and (c) the distance of the estates from the respective town centres of Chester le Street and Houghton le Spring.

(a) Houghton le Spring

In examining the reasons why people moved to the Penshaw estate, households were divided into those that previously lived in Sunderland, the 'Sunderland' households and those that lived elsewhere.

Table B.16

Penshaw estate
Reasons for moving to the estate

Reasons	Previously lived Sunderland	Elsewhere	All households
	%	%	%
House (price,size etc.)	62.7	35.9	53.4
Area (nice,healthy etc.)	21.3	5.4	15.8
Near work	2.9	30.4	13.1
Near Sunderland	7.4	10.9	7.9
Near relatives/home	1.7	13.0	5.6
Miscellaneous	1.7	3.3	2.3
No reason	2.3	1.1	1.9
TOTAL households	174	92	266

Movement to the suburbs is motivated by complex reasons.

For some the movement to the suburbs is a necessity; the price and availability of houses may be such that they are forced to move to the suburban estates. To others movement to the suburbs is a striving after the utopian ideal of the marriage of town and country, a balance between the centrifugal and centripetal forces in the city (see Colby, 1933). The first two reasons in Table B.16 are the basic centrifugal forces : the open undeveloped countryside offering housing space, cheaper land, lower rates, healthy environment etc. And so 84% of the 'Sunderland' households gave these as their reasons for moving to the estate; this is itself an underestimation since a further 7% moved so as to be near Sunderland. In fact the only reasons that were of a non-suburban prompting were from the 3% who wanted to get nearer their work and the 2% nearer relatives.

Households that previously lived elsewhere, i.e. outside Sunderland, were attracted to the estate for two main reasons : (i) the house and its environment, and (ii) its proximity to Sunderland and/or place of work. Housing considerations were most important for 41% of these households. Job considerations were next in importance, 32% wanted to get nearer their work (in Sunderland or elsewhere) and 11% nearer Sunderland.

The reasons given by the two groups of households in Table B.16 are consistent with each other; differences in the table are more apparent than real. For instance, the majority of households that previously lived elsewhere, i.e. outside Sunderland, who triedto get nearer their work were in fact employed in Sunderland and if originating from Sunderland would almost certainly have given housing conditions as their chief reason. The high percentage of the 'non-Sunderland' households that wished to live near relatives or home (13%) is boosted by those that previously lived in the local area; 7 of the 12 households that gave that reason were from the local area.

(b) Chester le Street (includes North Lodge estate)

Only households that originated from outside Chester le Street were askedto give reasons for moving to the estates. These households are divided into those that previously lived in (a) Tyneside and (b) elsewhere.

In Table B.17 housing considerations are again most important; 57% of the households that moved from Tyneside and 42% of all other considered these the most compelling reasons. The percentages for 'Tyneside' households it will be noted, are far below those for 'Sunderland' households on the Pennshaw estate; among other things this can be accounted

Table B.17

Chester le Street

Reasons for moving to the private estates (includes North Lodge)

Reasons	Previously lived Tyneside %	Previously lived Elsewhere %	All households %
Attractiveness of estate	29.7	18.9	22.7
Residential amenities	27.4	23.1	24.6
Convenience for travel	29.7	34.3	32.7
Shopping centre	5.5	7.1	6.5
Job in Chester le Street	4.4	9.5	7.7
Association with area	3.3	7.1	5.8
TOTAL households	91	169	260

for by the distance of Chester le Street from Tyneside but most important of all by the fact that the estates are a physical part of the town. The close association between the estates and the town can be seen from the number of households that preferred Chester le Street because of its shopping centre.

The most interesting reason, however, is 'convenience for travel', 33% of all households (30% of Tyneside households). Included in this group are those who tried to get nearer their work but almost one in three was either further

from his work or else an area worker. The area representatives stressed the centrality of Chester le Street for the whole of County Durham and Northumberland (some representatives covered the four northern counties of Durham, Northumberland, Cumberland and Westmorland as well as Scotland). Many area representatives are also based in Newcastle and Chester le Street is thus conveniently near. Other householders stressed the centrality of Chester le Street for the three points of Newcastle, Sunderland and Durham for shopping, entertainment and employment possibilities. Other householders merely referred to the centrality of Chester le Street and when asked to be more specific, answers ranged from 'for everything' to 'accessible to the beaches, the countryside to the west, the town (Newcastle) etc.' in short Chester le Street was far enough away from Tyneside to offer a wide choice of desirable residential amenities but still accessible to everything in Tyneside.

Reasons given by the estate households in both Houghton le Spring and Chester le Street are consistent with other observations in suburbs and overspill communities. The overspill communities are usually from areas of poor housing (almost 100% of those interviewed in Worsley, see Cullingworth 1960) and good housing conditions are by far the greatest

attraction. In a study of overspill it was found that 85% of those moving from London to Swindon (80 miles away) gave 'decent housing conditions' as the main reason for moving (Cullingworth 1961).

In the voluntary movement to the suburbs the majority of people wish to combine the advantages of town and country. In his study of Glengormley, a Belfast suburb, J.H.Johnson observed that those who previously lived in the city moved out to the suburbs manifestly for better housing but with the implicit desire to remain near the city while those from elsewhere moved nearer the city in order to be nearer their work (or employment prospects) yet at the same time avoiding the less pleasing environment of the city proper - a precarious tight-rope walk or the whimsical working of what Colby calls 'the Human Equation.'

Service orientation of private estates

One of the main problems in dormitory towns is the degree to which local facilities cater for the urban needs of the residents. In the case of outward suburban movement the problem is more complex and one needs to know just what the new residents are prepared to procure locally and how much they look back to the parent town. Next to employment,

shopping is the most important task of a household and it was, therefore, decided to study the shopping habits of households on the Penshaw estate.

Some information on shopping was obtained for all private estates through the Shopping Questionnaire Survey (see Section 2). In the interview survey of the Penshaw estate all households were asked to indicate the place where the bulk of the weekly groceries were purchased and the frequency of shopping trips to Sunderland and Houghton le Spring.

(a) The Penshaw estate

Local facilities are of an adequate standard for weekly shopping purposes. There are three centres in the immediate area : Shiney Row, the largest, is a rapidly developing village centre with a fair cross-section of shops which included among the 28 shops a large co-operative store and a modern supermarket; the other two centres, Barnwell and Penshaw, are essentially food centres though each has a chemist shop. New Herrington, a short distance away, is also included among the local centres.

Sunderland and the local centres attracted 88% of all households while 3% bought their groceries from mobile shops or had them delivered without calling at the shops.

Houghton le Spring (4%) was the only other important centre. In the following analysis of consumer behaviour only purchases made at the local centres and Sunderland are described.

A detailed analysis of the consumer orientation of households on the estate suggested that there were three main factors influencing the choice of centre for the purchase of groceries. These were:

(a) Previous residence of households

(b) working status of the wife

(c) Place of employment of working wives

Table B.18 shows the percentage of households that shopped at each centre. Sunderland attracted 35% and the local centres 53%, of all households but the percentage shopping at either centre varied significantly with differences in the previous residence of households. Thus, Sunderland attracted 42% of the 'Sunderland' households but only 21% of all others. The local centres showed an inverse relationship and from 48% of the 'Sunderland' households their share rose to 62% of all others. Previous residence was, therefore, a significant factor influencing the place where weekly groceries were purchased.

Table B.18

Weekly Groceries - Penshaw Estate

Place of Purchase	PREVIOUS RESIDENCE Sunderland	Elsewhere	WORK STATUS (Wife) Working	Non-working	TOTAL
	%	%	%	%	%
Sunderland	42.0	20.6	53.1	26.7	34.6
Local Centres	48.2	62.0	32.9	61.5	53.0
Other Centres	7.5	14.1	10.2	9.7	9.7
At door	2.3	3.3	3.8	2.1	2.7
TOTAL	174	92	79	187	

Table B.18 also divides households into those with working wives and those without. Sunderland attracted twice as high a percentage of working wives households as of non-working wives households (53% against 27%). The local centres again showed an inverse relationship and were only half as attractive to working wives households as to non-working wives households (33% against 62%). The dependence of the local centres on non-working wives is shown by the fact that working wives households formed only 18% of the total who shopped locally compared to 46% of those who shopped in Sunderland (working wives households formed 30% of all households on the estate).

Table B.19 identifies variations between working wives and non-working wives households that had previously lived in the same area. Note that Sunderland attracted twice as high a

Table B.19

PREVIOUS RESIDENCE

Place of purchase	Sunderland		Elsewhere	
	Working %	Non-working %	Working %	Non-working %
Sunderland	64.2	31.4	26.0	18.8
Local Centres	25.0	59.3	52.1	65.2
Other centres	9.0	6.8	13.2	14.5
At door	1.8	2.5	8.7	1.5
TOTAL households	56	118	23	69

percentage of working wives households as of non-working wives households from among those households that previously lived in Sunderland (64% against 31%). The local centres on the other hand attracted a high percentage of Sunderland households when they contained non-working wives (59%) but relatively few when there were working wives (25%).

Place of employment is also an important factor determining shopping orientation. Table B.20 divides households into four work groups, one of which is wives that work in Sunderland, the most important employment centre for women.

Table B.20 (a) shows the 'Sunderland' households divided into four work groups. Sunderland received its maximum patronage from those households with wives working in Sunderland (67%); there is then a decline by explicable stages to those that are 'working' (64%) to those that work outside Sunderland (43%)

Table B.20

Penshaw Estate - weekly groceries

(% of purchases made at Sunderland and at local centres)

Work status of wife	(a) previous residence Sunderland S'land %	Local %	Sample No.	(b) previous residence Elsewhere S'land %	Local %	Sample No	(c) All Households S'land %	Local %	Sample No
Works Sunderland	67.3	26.5	49	40.0	53.3	15	60.9	32.8	64
Working	64.2	25.0	56	26.0	52.1	23	53.1	32.9	79
Works outside Sunderland	42.8	14.3	7	-	50.0	8	20.0	33.3	15
Non-working	31.4	59.3	118	18.8	65.2	69	26.7	61.5	187
All households	42.0	48.2	174	20.6	62.0	92	34.6	53.0	266

and finally the non-working wives households (31%). The local centres attract a small percentage of all working wives households but 59% of the non-working wives households.

Table B.20 (b) shows that Sunderland attracted a low percentage of all 'non-Sunderland' household groups but with an expected high for those with wives working in Sunderland (40%) and a low for those with wives working elsewhere, none of the eight such households. The local centres retained at least half of the grocery purchases of the three working wives groups of households but their maximum attraction was for non-working wives households (65%). Note that the households that previously lived locally did not have a significant influence on any of the household groups; in their shopping habits they were remarkably similar to the other households that had previously lived outside Sunderland.

For comparison with the rest of the Penshaw Ward use is made of data obtained from the Shopping Questionnaire Survey; in this survey 72 households in the rest of the ward were interviewed. This survey is also used in the computation of the durable goods expenditure of both the estate (sample of 12 households) and the rest of the ward. The Family Expenditure Survey was used to estimate the amount of money that would have been spent on each of the durable

goods items included in the questionnaire (see Table C.22 in the Appendix).

There was a marked contrast between the estate and the rest of the ward for the purchase of weekly groceries. Only 3% of households in the rest of the ward purchased their weekly groceries in Sunderland; 77% bought theirs at the local centres while a further 10% bought theirs from mobile shops.

Table B.21 shows the percentage of durable goods expenditure made at the different centres. Because of the smallness of the estate sample it is necessary to point out that there is probably a Newcastle bias in the sample. Two of the twelve households had previously lived in Newcastle and Wallsend respectively, whereas only 5% of all estate households had previously lived in Tyneside.

The estate's expenditure pattern shows a marked dissimilarity to the rest of the ward. Local and other small centres attracted a sizeable proportion of the durable goods expenditure of the rest of the ward whereas the estate's was channelled to the regional centres, Newcastle and Sunderland. In bald statistics, 33% of durable goods expenditure was made outside the regional centres by the rest of the ward compared to only 9% by the estate. The

Table B.21

Durable Goods Expenditure - Penshaw ward

Type of house occupied	Sunderland %	Newcastle %	Local %	Others %	Sample of Households
L.A. Housing (Council)	60.1	5.5	22.3	12.1	40
PRIVATE HOUSES (£30 & under R.V.	55.6	6.3	17.4	20.7	16
(£31-56 R.V.	71.9	1.9	21.3	4.9	11
(£57 & over R.V.	66.9	14.5	14.6	4.0	5
rest of Penshaw Wd.	61.4	6.0	20.4	12.2	72
Penshaw Estate	74.2	17.2	8.1	0.5	12

explanation for this is partly the newness of the estate but as Table B.21 demonstrates, socio-economic differences probably account for the fundamental differences between the shopping habits of households on the estate and those in the rest of the ward.*

* For differences in the shopping habits of households od different social class, see Section 2 Chapter 6.

In the rest of the ward, households were divided into four groups based on the type of house occupied. These were

(a) council houses

(b) private houses of low rateable value (R.V. £30 and under)

(c) private houses of intermediate rateable value (£57 or more)

(see page 204 for justification of these divisions). Households in the lowest valued private houses and council households spent the least in the regional centres, 62% and 66% respectively of their durable goods expenditure. There was then a stepped increase in expenditure in the regional centres with increase in the rateable values of the houses: 74% by households in intermediate valued private houses and 81% by those in the highest valued private houses. On the estate 91% of durable goods expenditure was attracted to the regional centres.

Throughout the present study there has been constant evidence of a continued association by estate households with the parent town. The proximity of the estate to Sunderland is to some extent responsible for this close association; thus, 80% of 'Sunderland' households shopped in the town at least once a week. The households that previously lived outside Sunderland shopped less frequently in the town (57% visited it at least once a week for shopping) than 'Sunderland' households

but as frequently as households in the rest of the ward. Very few households either did not visit Sunderland for shopping or very rarely did so; the large majority of these preferred to shop in Newcastle and were generally those that had previously lived in Newcastle or its hinterland. For instance, a housewife who previously lived in Fatfield, one mile from the estate but west of the river Wear, spoke of Newcastle as the 'town' and continued to shop there in preference to Sunderland.

In contrast to the strong association with Sunderland was the tenuous link between the estate and the town of Houghton le Spring. It has been seen that few residents had previously lived in the urban district, that few were employed there and that few used the town centre at Houghton le Spring for their weekly grocery purchases; in all these things the town centre was completely dominated by the stronger attraction to Sunderland.

Only 27 households (10%) visited Houghton le Spring weekly and of these 20 were for shopping purposes. Of the 58 households which had visited the town centre at least once in the previous six months, 47 did some shopping, 5 paid their rates, 2 went for purely social reasons, 1 to the maternity clinic and 2 out of curiosity. Excluding those who regularly

purchased their weekly groceries in the town centre (11 households), the shopping trip seemed to be one of curiosity : 'a look into Woolworths to see if there is anything interesting' or 'a walk round the shops'. Many householders explained that it was not worthwhile going down to pay the rates half-yearly so they had resorted to posting their payments by cheque.

(b) Chester le Street (excludes North Lodge)

In the Chester le Street estates there was more association with the town. This was for several reasons

(a) there were relatively fewer households from Tyneside/Wearside and more from the local area
(b) a high percentage of housewives were employed locally
(c) the estated were a physical part of the town, and
(d) excellent shopping facilities were available in Chester le Street.

As a result of the above factors there was, in addition to the expected switch from Sunderland to Newcastle, a lower percentage of durable goods expenditure in the regional centres and a larger percentage expenditure in the local centre, Chester le Street.

Table B.22

Chester le Street (four wards of the town)

Durable goods expenditure

Type of house occupied		Newcastle %	Sunderland %	Local %	Others %	Sample House holds
Council		22.8	1.5	74.1	1.6	72
Private	R.V. £30 and under	20.4	2.8	75.0	1.8	17
	R.V. £31-£56	26.0	1.8	71.6	0.6	21
	R.V. £57 and over	51.0	2.5	43.9	2.6	17
	ALL above	27.2	1.9	69.3	1.6	127
All on private estates		59.3	5.1	31.4	4.2	17
'Associated' households on private estates		55.3	3.3	39.7	1.7	6

Table B.22 shows much the same differences between the estate households and the rest of the town's population as was the case between the Penshaw estate and the rest of its ward. The table stresses that the differences between the shopping habits of estate households and those of the local population are not only because of socio-economic differences but also because of the outside association of the majority of the estate households. The latter is brought out by comparing the durable goods expenditure pattern of those households on the private estates that were 'associated' with Chester le Street, i.e. had previously lived in the town or because the wife worked locally, with the other household groups. The expenditure pattern of the 'associated' private estate households is very close to that of the local households in the highest valued private houses.

The above study of private estates in Houghton le Spring and Chester le Street suggests that the shopping habits of the estate residents differ significantly from those of the local population. It has been demonstrated that consumer behaviour on the estates is strongly influenced by the previous residence of the household, the work status of the wife, the place of employment

of working wives and the socio-economic status of the residents. The present study suggests that there is considerable scope for future research into the shopping habits of households on new private estates. Research ought to be directed at discovering whether private estate households adopt shopping habits that are significantly different to the local households and whether apparent differences are merely symptoms of the process of assimilation.

Chapter 4

Sphere of Influence

Shopping

Both Houghton le Spring and Chester le Street are weekly shopping centres. They serve their hinterland populations with a range of shops supplying food and lower order durable goods (theoretically all goods that are supplied at centres below the regional centre level; in this area the regional centres are at Newcastle and Sunderland). In Section 2 the functions, hinterland population, consumer attraction and trade area of each centre are described fully from data obtained through the Shopping Questionnaire Survey. In this chapter, the trade area of each centre is derived mainly from an analysis of the trade areas of a selection of shops; the results were, however, similar to those obtained from the Questionnaire Survey.

Houghton le Spring is smaller and less prosperous a centre than Chester le Street. This is evident from both the number of retail establishments and the ground floor shopping space in each of the centres. In the town centre of Chester le Street there are about 110 shops, nearly all are in Front Street. In Houghton le Spring there are

about 60 shops in the town centre; Newbottle Street is the main shopping street and contains the larger and more modern shops, but there are also many shops in Sunderland street. In Chester le Street the ground floor shopping space is 164,000 sq. ft. and in Houghton le Spring, 98,000 sq. ft. (storage space is included in both).

Differences in the number of establishments and in the total ground floor space suggest that turnover in Chester le Street is almost twice that of Houghton le Spring, but information obtained from the Census of Distribution and the shopping questionnaire survey indicates that Chester le Street's turnover is at least three times that of Houghton le Spring.

Table B.23

Retail turnovers

	1951		1961	
	Chester U.D. £'000	Houghton U.D. £'000	Chester U.D. £'000	Houghton U.D. £'000
Convenience goods	972	1,682	1,740	2,850
Durable goods	1,182	713	2,101	971
TOTAL	2,154	2,395	3,841	3,821

(Turnover in 1950 is based on 1961 classification)

In the Census of Distribution of 1961 the total turnover in both urban districts was almost exactly the same (see Table B.23). There were, however, significant differences between the towns. Firstly, Houghton le Spring's population was one and a half times that of Chester le Street; secondly, convenience goods sales formed 75% of total turnover in Houghton le Spring but only 45% in Chester le Street; and thirdly, in absolute terms the durable goods sales in Houghton le Spring were less than half those in Chester le Street.

Table B.24

Central Area turnover

	Chester le Street £'000	Houghton le Spring £'000
Convenience goods	1,550	530
Durable goods	2,050	548
TOTAL	3,600	1,078

(N.B. Chester le Street's turnover is estimated from the town centre's share of the total shopping space in the urban district.)

Information on Central Area turnover was specially extracted by the Board of Trade for Houghton le Spring*.

* obtained through the Durham County Planning Office.

Similar information was not obtained for Chester le Street since the Central area is the only important shopping centre in the urban district; ground floor shopping space outside the Central area is less than 10% of the total in the urban district.

In the 1961 Census of Distribution, only 22% of the retail establishments in Houghton le Spring U.D. were in the Central area. There are large village centres at Shiney Row (28 shops), Fence Houses (21 shops), Colliery Row (21 shops), New Herrington (17 shops) and a small centre at Barnwell (8 shops)*. As a result the Central area's share of total turnover in the urban district was only 28%; it was of course, much higher (56%) than for convenience goods for durable goods/(18%). The low turnover in the Central area and its low share of the total turnover in the urban district are clear indicators of a weakness in Houghton le Spring's shopping centre.

It would appear from Table B.24 that turnover in Chester le Street's Central area was about 3½ times that of Houghton le Spring's in 1961; the durable goods sales in Chester le Street were almost four times those of Houghton le Spring. Turnover in Chester le Street's

* the number of shops was counted in a survey in 1965.

Central area is based on the generous estimate that turnover outside the Central area would not have exceeded 10% of the total in the urban district viz. turnover that is directly proportional to the percentage of shopping space outside the Central area.

Direct comparison cannot normally be made between published figures for individual towns for 1950 and 1961 because of the element of non-response and intercensal changes in scope, coverage and presentation. Comparable figures based on the 1961 classification were, however, obtained from the Board of Trade for both urban districts for 1950. Changes between the two censuses can, therefore, be fairly accurately observed for both towns.

Between 1950 and 1961 total turnover in Chester le Street U.D. increased by 78% and in Houghton le Spring U.D. by 59% (national increase was 78%). There was, however, a much more significant difference between the two urban districts in durable goods turnover; in Chester le Street U.D. this increased by 78% but in Houghton le Spring U.D. the increase was only 36% (see Table B.23). The decline in Houghton le Spring's shopping centre was chiefly in durable goods turnover and this is reflected in

criticisms voiced by shoppers and shopkeepers in the area (see page 172). Since 1961 the major developments in the shopping centre have generally followed the 1950/61 trend. Except for the transference of Woolworth to a larger and more modern building (almost directly opposite the old building in Lower Newbottle Street) all the important developments have been carried out by food dealers e.g. the establishment of two multiple supermarkets, Fine Fare and Brough's and the establishment of another multiple supermarket, Moore's, in the property vacated by Woolworth.

In the shopping Questionnaire Survey of the hinterlands of both centres (seeSection 2) it was found that on an average the population served by Chester le Street was about three times that of Houghton le Spring. Table C.16 and 17 show that differences between the populations served by each centre varied with the type of good. For convenience goods (groceries and meats) and lower order durable goods (chemist goods, T.V. sets, hardware, kitchen appliances and cycles/prams) the population served by Chester le Street was approximately twice that of Houghton le Spring. For the higher order durable goods the differences were greater. The population served by Chester le Street for clothing and footwear was between four and five times that of Houghton

le Spring; for jewellery and furniture the populations served by Chester le Street were respectively eight and nine times that of Houghton le Spring (there were in fact no specialist shops in the latter for either of these goods).

It would appear from the above that Chester le Street offers a wider range and greater choice of shops than Houghton le Spring and one further indication of these differences in the size and status of the shopping centres is the degree to which multiple organisations are represented.

Only two of the major non-food multiples, Burton's and Woolworth's, are found in Houghton le Spring. In addition to these two, several others are represented in Chester le Street; the more important of these are Jackson's (tailor), Boot's and T.White's (chemists), Hardy's and Smith's (furnishers) and Tate's (radio and T.V.). Grocery multiples are less important as indicators of the status of a shopping centre but there is, nevertheless, a distinct concentration of grocery multiples in bettter grade centres. In Chester le Street there were eleven grocery multiples and in Houghton le Spring there were six (including co-operative stores in both centres).

The selling floorspace of grocery multiples in Chester le Street was more than twice that of Houghton le Spring (14,000 against 6,650 sq.ft.)*

These functional differences between the towns can best be summed up by taking an inward view of the two town centres and examining something of the impact which they have had on the structure of each settlement's Central Area.

In Chester le Street, central place functions have always been carried on in Front Street. The only changes have been an extension of activities along lower Front Street and to the north of the recently covered Cong Burn (c.1956). Throughout the town's history the north end of Front Street has been the most important (and oldest) part of the town and the highest rateable values are still found in this part of the town centre (see Fig.B.7a). A comparison of the rateable values of 1934 and 1963 in Fig.B.7b shows that there has been no post-war decline in any part of the town centre (even after allowing for depreciation in the value of the £). The most interesting increases were in the two blocks north of the covered Cong Burn; the western block (R.V.£20-

* Survey by D.Thorpe in 1965

£29 per foot frontage) has only recently been developed for commercial purposes. The increased value in this area can be accounted for by the covering of the Cong Burn, the transference of the stall market to the covered area and its proximity to the heart of the town centre.

It was seen that during the 19th century there was a transference of central place activities in Houghton le Spring from the Market Place of the old village to Sunderland Street. During the 20th century there has been a further movement to Newbottle Street. In the post-war period there has been a further concentration of activities in Newbottle street and a corresponding diminution in Sunderland Street and Church Street (the old centre). Fig.B.8 shows the post-war rateable values and changes in the three commercial streets.

The switch of central place activities from Sunderland Street to Newbottle Street occurred at the turn of the century and was prompted by the presence of undeveloped land on the west side of the street (lower and middle Newbottle Street), the present high valued area. As a result the available land attracted larger establishments and new functions, e.g. the cinema. Sunderland Street, on the other hand, declined in importance since expansion was limited by the small size of its establishments, the

absence of undeveloped plots, the high elevation of upper Sunderland Street and its distance from the populated areas of Newbottle, Shiney Row etc. (to the east of Sunderland street is the sparsely populated Magnesian limestone plateau). In recent years several firms have transferred operations from Sunderland Street to Newbottle Street.

A comparison of the rateable values of 1934 and 1963 in Houghton le Spring's Central area (Fig.B.8b) shows that lower Newbottle Street increased in value and middle Newbottle Street remained at a constant high value. Upper Newbottle Street, Sunderland Street and Church Street, the lower valued areas, all declined in value during the same period.(Allowance is made for depreciation in the value of the £).

The concentration of activities in lower and middle Newbottle Street is not so much a centralization of activities as a retreat or withdrawal into a safe zone. This trend appears to have resulted firstly, because entrepreneurs are reluctant to move away from this zone because in a declining centre like Houghton le Spring such a move might be economic suicide and secondly, because of the uncertainty engendered by the proposed development plan for the town centre. The present plan has been in

its proposed stage for some time; it has gone through its public exhibition and public enquiries chrysalises and in the meanwhile the centre seems to be losing its vital force. So much of the town centre is 'ripe' for redevelopment that little can be done until the plan is finally approved; it is certain that most of upper Newbottle Street and Sunderland Street will be redeveloped.

Because the gross rateable value is compiled by the Central Government a good deal of standardisation can be expected throughout the country (see Herbert, 1961). Within a small area it can be safely assumed that there will be no significant variation in the criteria used in compiling the gross rateable value and so a direct comparison between Chester le Street and Houghton le Spring is valid. In Figs.B7 (a) and B8(a) the rate index is the gross rateable value per foot frontage.

In the commercial areas of Chester le Street there is no block with a rate index of less than £10 whereas in Houghton le Spring only those blocks in middle and lower Newbottle Street have a rate index of £10 or more. In the majority of blocks in Chester le Street the rate index is over £20; in one block the rate index is over £40. In Houghton le Spring, on the other hand, only one block has a rate index of over £20.

Retail trade areas

(a) Chester le Street

Information was obtained from a cross-section of shops in the shopping centre. The most useful were from a small department store (deliveries), a children's shop - cycles and prams (deliveries), a multiple tailor (orders and their value) and a multiple furnisher (deliveries); all the above information was for the whole of 1963. Information was also obtained from a multiple supermarket (addresses of customers and values of purchases) during a selected week in 1963. A survey was also made of the registration numbers of all cars parked in the town centre on a particular Saturday; the home addresses of the car owners were subsequently found out.

The intensive trade area of centres like Chester le Street is usually within a radius of three miles. In the Shopping Questionnaire Survey it was estimated that 92% of the food purchased in Chester le Street and 82% of the durable goods were bought by consumers who lived within three miles by road of the shopping centre. The lower order goods had a much smaller trade area e.g. 95% of consumers purchasing chemist goods, lived within three miles, while the higher order durable goods attracted consumers from a wider area, e.g. only 77% of consumers

purchasing men's clothing lived within three miles of the centre.

Based on data obtained from shops it would appear that Chester le Street's intensive trade area (here defined as that which contains 80-90% of the centre's trade) is virtually contained within the limits of its rural district; only Kimblesworth parish (Durham R.D.) lies outside but the settlement is only 3 miles from Chester le Street. Within the rural district there are, however, several parishes which are not dominated by Chester le Street for the supply of its specialist goods. Of these parishes, Lamesley is without doubt outside all but Chester le Street's fringe trade area*. In another four parishes, Chester le Street is the most important weekly centre but is unable to dominate these areas because of competition from other centres; Burnmoor and Birtley are attracted towards Sunderland and Newcastle respectively, while Urpeth and Sacriston are drawn towards Stanley and Durham respectively.**

* the two settlements in this parish, Kibblesworth and Eightom banks, look instead to Gateshead/Newcastle as their weekly centre.

** for the location of parishes and wards named in this chapter see Fig.C.1.

Besides Kimblesworth parish, Chester le Street draws a moderate amount of custom from several parishes outside its rural district. Witton Gilbert, Framwellgate Moor (Durham R.D.) and Fence Houses ward (Houghton le Spring U.D.) are moderately attracted to Chester le Street and are within its extensive trade area. A smaller but consistent percentage of consumers are attracted from West Rainton parish (Durham R.D.), Esh Parish (Lanchester R.D.) and Penshaw ward (Houghton le Spring U.D.) together with Craghead ward (Stanley U.D.)

Table B.25

Chester le Street : % of trade contained in

		Chester U.D. %	Chester R.D. %	U.D. & R.D. %
Shops	Small department store (deliveries)	45.0	39.7	84.7
	Multiple tailor (orders)	38.9	47.4	86.3
	Children's shop (deliveries)	46.6	40.5	87.1
	Furnisher (deliveries)	41.4	48.6	90.0
	Supermarket (sales)	66.6	25.9	92.5
Shopping Questionnaire Survey	Food	56.5	38.2	94.7
	Durables	47.6	39.3	86.9

In the Shopping Questionnaire Survey it was found that 95% of the food purchases and 87% of the durable goods purchases were from consumers who lived within the Chester le Street urban and rural districts. From an analysis of the deliveries, orders and sales of the selected shops it would appear that between 85 and 90% of the turnover of non-food shops was from consumers who lived within the two districts; in the supermarket the percentage was 93%. The two surveys are, therefore, very similar, bearing in mind the variations that are to be expected in the trade areas of different types of shops. Note that in Table B.25 differences between the supermarket's trade distribution and that of 'food' from the Shopping Questionnaire Survey can be accounted for by the fact that the latter was estimated from the number of consumers who visited the centre for weekly groceries (and meats) while the former was estimated from the actual sales of a complete week and there would, therefore, be a bias in favour of the nearer district i.e. Chester le Street U.D.

A comparison of the sales origin of the Chester le Street supermarket (based on sales floor interviews of a sample of customers during the survey week) with the origin of orders placed with the multiple tailor (70-75% of the total turnover of the shop) brings out the

variations in the trade areas of different types of shops. Chester le Street U.D. and R.D. accounted for 93% of the supermarket's turnover compared to 85% of the multiple tailor's. The supermarket's trade area consisted of an inner intensive zone from which it drew a very high percentage of its sales: this area was conterminous with the main built-up area of Chester le Street (see Fig. B.12). On the other hand, the addresses of the multiple tailor's customers showed a more even spread (see Fig. B.10); thus, for example, the expenditure per household for 1963 attracted by the multiple tailor was 25s from Chester le Street's main built-up area, 23s from Gt.Lumley parish, 18s from Kimblesworth parish and 14s from Sacriston, respectively within one, two, three and four miles of the shopping centre. Thus, 67% of the supermarket's sales originated from within the urban district compared to 39% of the multiple tailor's.

Figs.B.9 toB.13 show the trade areas of a selection of shops. From the distribution of customers it is apparent that Chester le Street attracts a higher than expected custom from two areas. The first is east of the town at Fence Houses where the directly competing centre is Houghton le Spring, a weaker centre. The second is to the south-west of the town and includes a string of settlements,

Sacriston, Witton Gilbert, Langley Park (Esh parish) and Esh winning; Durham is the competing centre in this area but it is itself more than three miles from each of these settlements and though it attracts a higher percentage of custom than Chester le Street from the settlements (except Sacriston) it is unable to dominate them.

A survey of parked cars was carried out in December 1964 to see if the home addresses of owners correlated with the trading data obtained from the shops. The registration numbers of all cars parked in the town centre at 11 a.m. and 5 p.m. on a Saturday were recorded. Numbers that recurred at both counts were eliminated since these were presumably there for purposes other than shopping. Because of the small number of cars with addresses in County Durham it is difficult to infer very much from the figures. There were 493 cars with known addresses in the region* and of these 155 cars were from the main built-up area of Chester le Street and a further 15 from the rest of the urban district. About 11% of the cars were from/beyond what would be considered Chester le Street's

* Many cars were probably not yet registered with the Durham Taxation Office because of the recent purchase of the cars or recent arrival of the owners.

widest trade area, the majority of these were from Newcastle, Gateshead and Sunderland and were presumably there for commercial reasons: See Fig.B.14 and Table B.26.

Table B.26

Chester le Street : Home addresses of parked cars

	Number	%
Chester le Street U.D.	170	34.5
Chester le Street R.D.	169	34.3
Durham R.D.	26	5.3
Houghton le Spring U.D.	23	4.7
Washington U.D.	13	2.6
Stanley U.D.	13	2.6
Newcastle C.B.	15	3.0
Gateshead C.B.	12	2.4
Sunderland C.B.	8	1.6
Rest of Co. Durham	44	9.0
TOTAL	493	100.0

The percentage of home addresses in the urban and rural districts was 69%; this is lower than the percentage of Chester le Street's turnover as suggested by an analysis of the selected shops and the Shopping Questionnaire Survey

and is caused by the unavoidable inclusion of non-shoppers e.g. Newcastle/Gateshead/Sunderland. With the elimination of those cars that were apparently there for purposes other than shopping, e.g. Newcastle, the percentage of cars from the urban and rural districts was about 80% which is approximately the expected amount.

A division of addresses of car owners into parishes and wards showed that there was a positive correlation with data from the shops, especially from the small department stores. A high correlation with data from the shops was difficult for two reasons: firstly, the small size of the sample of cars and secondly, the fact that the possession of a car obviously varies with the socio-economic status of households. It was quite apparent that in the colliery villages the number of car addresses was low relative to the number of shoppers that visited the shopping centre. On the other hand, the parishes of Ouston, Harraton, Gt. Lumley and Framwellgate Moor show a high ratio of cars to shoppers;in all four parishes there are large private housing estates. See also Table C.1. for differences in the rate of car-ownership by types of houses occupied.

One feature of shopping in Chester le Street which has not so far been mentioned is the retail stall market.

The holding of a weekly market was already firmly established during the inter-war period and the market was transferred to its present spacious site in 1957 over the then recently covered Cong Burn. The market covers an area of about 10,000 sq.ft. and operates on a Friday.

It is not possible to find specific evidence for the attraction of shoppers to the market but there is no doubt that the presence of the market has enhanced the popularity of Chester le Street. Far more people are attracted to Chester le Street on a Friday than on any other shopping day; this is confirmed by the two major bus companies which operate in the Chester le Street area. The stall market is considered to be among the largest in the region; the nearest markets of comparable or larger size are reckoned to be South Shields, Newcastle and Stockton. Each week there are 120 stallholders and 40 'pitchers' i.e. those who operate without a stall, either from a vehicle, a table or some other improvised means.

(b) Houghton le Spring

It proved more difficult to obtain information from shops in Houghton le Spring than in Chester le Street. In the first place there were fewer large shops and secondly, a lack of alternative shops in the event of a refusal by the

management of those approached. The most useful information was obtained from a small department store (branch of the same firm as the one in Chester le Street) and a furnisher's. Limited information was also obtained from several other food and non-food shops. Because of the paucity of the data obtained from shops, information on Houghton le Spring's shopping sphere of influence was supplemented by the distribution of questionnaires to children at the Houghton Grammar School to be filled in at home. About one-third (135) of the forms were completed and returned.

The school questionnaire survey showed that the shopping centre was most often used for the purchase of convenience goods (groceries and meats) and low order durable goods (chemist goods, T.V. sets, hardware, kitchen appliances and cycles/prams). Clothing and footwear attracted very few consumers and this was especially so for women's clothing. Furniture and jewellery were the least purchased retail items. The Shopping Questionnaire Survey showed the same results; see Table C.17.

An appreciation of the status of the shopping centre can be had from an analysis of the criticisms made by shoppers in the school questionnaire survey. Parents were

asked to 'feel free to comment on the shopping and other facilities in Houghton le Spring'; about one-third of the returned questionnaires had a comment.

It was unanimously felt that the shopping centre had an adequate provision of food shops. A few shoppers suggested that there were in fact too many shops and advised that there should be no more supermarkets. Several local businessmen have also expressed this opinion, not because they consider the centre overshopped in this respect but because the preponderance of food shops spoils the image of the shopping centre and discourages other entrepreneurs and consumers from coming to the centre.

Other than for food provision there was a general dissatisfaction with the shopping centre. Clothing and footwear shops were most often mentioned as inadequate, particularly 'material' stores for women who make their own dresses. Several also noted the absence of jewellery and furniture shops but by far the biggest criticism was the lack of competition. Some of the comments included were 'the same shop is never passed twice' and 'no competition and so no choice' while several felt that this brought about a 'take it or leave it' attitude in some shops. The last criticism was particularly aimed at the small department store which, with the exception of Woolworth, was

considered the 'only decent shop' in the centre. Other widely expressed criticisms were: the difficulty of parking (there are no proper car parks near the town centre), a desirability of a traffic-free zone in Newbottle Street, the absence of cafes and restaurants in the centre (there is only one small cafe) and the larger choice available in Sunderland, a mere ten minutes away.

In summary it would appear that Houghton le Spring was not considered a satisfactory weekly shopping centre. This is probably the reason why one-third of those that commented on the shopping facilities in the centre suggested the need for a Marks and Spencer. Perhaps the most interesting and widely felt criticism was from a housewife in Grasswell, half a mile from the town centre:

'Houghton is a good shopping centre but lacks the Big store facilities and cafes of Sunderland and even if they were there I would still go to Sunderland for the change and day out'.

The above comment neatly summarizes the difficulty that besets the shopping centre, viz. its proximity to the regional centre, Sunderland. The shopping summary of the same Grasswell housewife is also very interesting and fairly typical of the use made of the shopping centre:

Place of Purchase	Items	Day
mobile shop	groceries, meats	Wed.Thurs. Sat.
Grasswell	sundries	daily
Houghton le Spring	greengroceries & cakes	Friday (weekly)
Sunderland	Big store shopping or window gazing	Saturday (monthly)

Houghton le Spring's trade area is much smaller than Chester le Street's. In the Shopping Questionnaire Survey it was found that 84% of its durable goods sales were to households that lived within two miles by road of the centre and 98% to those within three miles. It's trade area for food sales was even smaller and 93% of food purchases were made by households that lived within two miles.

The shopping centre is very susceptible to competition from other weekly shopping centres and even for its most specialist functions it has a constricted trade area except where favourable factors allow an extension of its influence. One such favourable area lies to the south-east of the town and includes the Hetton le Hole, Easington Lane and South Hetton settlements; there is also a small influence even as far as Peterlee, eight miles away (see Fig.B.15 and 16). The reason for the extension of its

influence beyond three miles in this area is partly the absence of a comparable competing centre and partly the configuration of the relief; the Magnesian limestone plateau to the east and a high parallel ridge to the west impede communications with areas other than along the north-west/south-east axis.

In contrast to the channelling of trade into Houghton le Spring from the south-east, there are exposed areas to the north and west of the town. The Penshaw/Shiney Row area in the north is within the urban district but is approximately equidistant to the shopping centres of Houghton le Spring, Chester le Street, New Washington and Sunderland. There is consequently a diffusion of the durable goods sales generated by the local population but the majority is drawn to Sunderland. To the west of the shopping centre, at Fence Houses, its influence is limited to two miles because of the competing centres at Chester le Street. Figs.B.9 and B.15 are comparable in that they refer to the same period of time and show by deliveries the trade areas of two branches of the same firm. The effective boundary between the trade areas of the two small department stores is nearer Houghton le Spring than Chester le Street, two miles and three miles respectively from the centres.

The most striking difference between the shopping centres of Chester le Street and Houghton le Spring is the inability of the latter to dominate its hinterland, even its own immediate area. The reason for the weakness in Houghton le Spring's shopping centre is its proximity to Sunderland which exerts a strong influence throughout the former's hinterland and even within the town itself. The loss to Sunderland of much of the lower order durable goods sales generated by the local population has considerably weakened the centre and the cause or effect of this is to be seen in the absence of many specialist shops in the centre. There is every reason to believe that the status of the shopping centre will decline, since there appears to be an increasing tendency for shoppers to visit the regional centre more frequently, but one indeterminable factor which may affect the future of the shopping centre is the proposed Town Centre redevelopment scheme. The wholesale redevelopment might conceivably sift out the smaller shops and in the process prove more attractive to multiple organisations.

Other services

Beside shopping both towns provide a wide range of other services. The services provided are generally those appropriate

to small/medium towns and include those concerned with local government administration, social services, entertainment as well as professional and commercial services. The spheres of influence of a few of the non-governmental services are examined below:

(a) Libraries

In both Houghton le Spring and Chester le Street there are main branch libraries. A 10% sample of the addresses of registered borrowers was taken in both libraries. Fig.B.17 shows the home addresses of registered borrowers. It is generally considered that there is some correlation between library usage and shopping orientation. This relationship is inferred from the greater incidence of women borrowers and the combination of visits to libraries with shopping trips. In the Chester le Street library, for instance, the highest issues are on Fridays and Saturdays; om an average 25% of the weekly issues are on Saturday (cf. 29% of the supermarket sales).

Although the addresses of users are virtually all within the extensive trade area of the towns (about 1% of library users reside beyond the maximum trade area of each centre), there is evidently no direct correlation. Firstly, the percentage of library users that reside within

the local area far exceeds the comparable figure for the shopping population; for instance, of the registered borrowers in their respective libraries 72% were from the town of Chester le Street and 65% from the town of Houghton le Spring (i.e. main built-up area of each). Secondly, the number of users from a particular area is directly dependent on the availability of other library facilities; this accounts for the low number of borrowers relative to shoppers that are attracted from Birtley parish (Chester le Street library) and Hetton le Hole (Houghton le Spring library) where there are also main branch libraries (see Fig.B.17).

In short, an analysis of library users is useful in delineating the trade area of the shopping centre but may indicate little about the intensity or degree of attraction of consumers from a particular area. Figs. B.17(a) and (b) can be compared with the trade areas of shops.

(b) Entertainment

Houghton le Spring provides a smaller range of entertainment than Chester le Street. In Houghton le Spring there are two workingmen's clubs, a cinema and a bingo hall whereas in Chester le Street there are a workingmen's

club, a cinema, two bingo halls, a dance hall, several hotels which cater for entertainment e.g. the Lambton Arms and a recently opened night club. It is interesting that the Houghton le Spring U.D.C. generally holds its annual dinner at the Red Lion Hotel, Chester le Street.

Information on the area served by the cinemas was obtained from the Shopping Questionnaire Survey. The catchment areas were generally the same as for the lower order durable goods. Of those in Chester le Street U.D. who had been to the cinema, over 70% went to the local cinema. Within a two-mile radius of Houghton le Spring about half the visits to the cinema were to the town's cinema. There appears, however, to be a reduced demand for cinema entertainment or rather there are two grades of cinema: the large ones in the regional centres and all others. Thus the presence of cinemas in Birtley and Sacriston reduced the percentage of people attracted from these areas (relative to shoppers). In Sacriston, none of the 41 households which indicated visits to a cinema had been to Chester le Street although about 40% visited it for their weekly shopping. The Sacriston cinema also attracted a higher percentage of people from the neighbouring parishes of Plawsworth and Edmondsley than did the Chester le Street cinema.

Bingo is undoubtedly the most successful of the entertainment enterprises in both towns. Within six months of the conversion of the Queen's cinema, Chester le Street, into a bingo hall, the membership rose to 21,000. Only 27% of the members were from the urban district while a further 32% were from the rural district (based on a 10% sample of the addresses of members). It is evident that the catchment area for bingo (Fig.B.13(b)) is much more extensive than that for Chester le Street's most specialised shopping functions; of special note is the number of people drawn from the Stanley and Consett areas and the extension of its catchment area into and beyond Houghton le Spring and Durham City.

It appears that the Queen's bingo is superior to the majority of other bingo halls in the area; this can be inferred from the vast membership, the prizes offered, the number of special coaches laid on for certain sessions (especially for players from the Stanley area) and also the recent successful application by the propietors to convert the only remaining cinema in Chester le Street into a bingo hall. It is, therefore, probable that the catchment area for bingo is neither typical of bingo halls in general nor of Chester le Street's sphere of influence, it does, however, underline Chester le Street's nodality, the base of its past and continuing prosperity. Compare, for instance, the bus hinterlands of Chester and Houghton (see Fig.B.18).

Similar information was not obtained for Houghton le Spring since the only bingo hall in the town had been operating for many years and an analysis of membership cards would have been less valid. It was hoped to obtain some information from the school questionnaire survey but there was almost certainly a reluctance on the part of housewives to indicate visits to bingo halls; the number that indicated such visits was only one-third as many as indicated visits to the theatre. Houghton le Spring was, nevertheless, the most important of the centres visited.

(c) Professional and commercial services

It would be very difficult to compare the two towns under the two broad groups of services though Chester le Street is clearly superior to Houghton le Spring as a centre for these services. There were, for instance, 3 surveyors, 3 architects/surveyors and 3 solicitors in Chester le Street but only 2 solicitors in Houghton le Spring. Of the more ubiquitous commercial functions there were 5 banks and 6 insurance establishments (3 companies, 1 agent, 1 broker and 1 friendly society) in Chester le Street compared to 4 banks and 3 insurance establishments (all companies) in Houghton le Spring (Classified Telephone Directory, May 1966).

Information on the attraction of the surrounding population to the centres for banking, doctor's surgery and solicitor's consultations was obtained from the Shopping Questionnaire Survey and the school questionnaire survey.

Of the three services, doctor's surgery was clearly the most localized. There were very few visits to either town from beyond a two-mile radius. Houghton le Spring served nearly all of its own ward and a much smaller percentage of the population in the rest of the urban district. There was very little demand for its services from the Hetton le Hole area. Much the same was apparent for Chester le Street and only the very nearest parishes looked to the town for this service. Some indication of the localized nature of this service was the fact that Sacriston, in addition to its own population, was able to serve the majority of the population, in the four neighbouring parishes of Edmondsley, Plawsworth, Witton Gilbert and Kimblesworth.

Banking was also a very localized service but banks are less ubiquitous than doctor's surgeries. Both centres serve virtually the whole of their local population and a small percentage of those in the nearer settlements. The

range of this service is again about two miles. The similarity of this service to the doctor's surgery is emphasized by the fact that Sacriston performs the same dominant role for the four neighbouring parishes.

Solicitors are singled out from the numerous other professions since it was evident from the school questionnaire survey that this service was most effectively supplied by Houghton le Spring to the surrounding population. Two-thirds of all households had had dealings with a solicitor and of these 75% had looked to Houghton le Spring for this service. It seems that this is a service that is still adequately catered for in small towns. Bracey in his study of Somerset (Bracey, 1953) noted that much of the shopping custom of smaller 'larger centres have captured/country towns but not their professional custom'. In the case of Houghton le Spring this was the most extensive and effective of the town's services.

A type of service not considered before is one in which the towns serve as a base for a surrounding 'service' area. The service area of such commercial concerns is fairly similar to the more rigid boundaries of government agencies and the latter are often considered to be unrelated to the spontaneous ebb and flow of the population. It was decided to examine one such commercial service and so

information was obtained from two branches of the same insurance company for both Houghton le Spring and Chester le Street.

In both towns the service area was found to be unrelated to what one would expect to be their spontaneous catchment areas, even after allowing for the necessity to eliminate overlapping of boundaries. The service areas were designed more to accomodate the number and location of the firm's branches in the area than to arrive at a 'natural' area for each centre or branch. Even the location of the firm's branches in the region may be unrelated to the status of a centre; for instance, a branch office at Houghton le Spring but none in Stanley, a larger centre.

So it is that the boundary of Chester le Street's service area in the east includes only those settlements that lie along the A.1 trunk road; its southern boundary extends only to Chester Moor [illegible] (1½ miles from the town centre); its western boundary includes half of Stanley U.D. and its northern boundary goes as far as Kibblesworth (Lamesley parish). Its boundary on the east and south is foreshortened by the presence of branches at Houghton le Spring and Durham while its western boundary is lengthened because of the absence of a branch at Stanley, the next is at Consett.

Houghton le Spring's service area is much the same but in this case the service area is everywhere more extensive than its normal catchment area. This is evident from the inclusion of Gt. Lumley which is most certainly oriented towards Chester le Street; there are also several other areas in the south-west which are outside the town's widest catchment area.

Conclusions

The most important feature of the towns at present is their spatial relationship with the port-conurbations; Chester le Street is oriented towards Newcastle, and Houghton le Spring towards Sunderland. This association between the towns and the conurbations appears to have increased significantly in recent years and will almost certainly be of greater importance in the future. Though the towns have always been associated with the conurbations, the scale and nature of this association has changed considerably since 1800. Of even more importance are the differences between the timing of the entry of the towns into suburban involvement with the conurbations.

During the 19th century the towns developed as coal mining centres and were relatively independent of the then heavily industrialized areas of Tyneside and Wearside. It appears, however, that Chester le Street was more closely associated with Newcastle and Gateshead than Houghton le Spring was with Sunderland. This is partly because of the easier accessibility between Chester le Street and Newcastle along the Great North Road but because of the greater influence of Newcastle, the larger and more important of the two regional centres. The opening

of the Team Valley railway line in 1868 linked Chester le Street with Newcastle and was also a contributory factor. (Before this there was already a strong link between the two towns*).

During the inter-war period, Chester le Street began to be more closely associated with Newcastle and the rest of Tyneside. This was because of the declining importance of coal mining in the local area and of improved communications with the conurbation (cf. the establishment of a bus depot in Chester le Street c. 1915). This association was apparent from the journey to work pattern of 1921 and from the development of housing estates for owner-occupiers in the 1930's. The land for private housing development was sold by the local council to encourage the development of the town as a dormitory for the conurbations and it is reasonable to assume that a large percentage of employed persons on the new estates would have been employed in Tyneside.

*For instance, local records report that on December 13, 1833 'three engines (fire) arrived from Newcastle in the course of a short time' because of a fire in the town of Chester le Street. (Latimer, 1857).

Houghton le Spring, on the other hand, was throughout the inter-war period a coal mining centre. The percentage of employed residents who were coal miners had shown virtually no decrease on the pre-1914 figure. Employment in the local collieries had shown no substantial decrease and there was, therefore, a high level of employment in the local area and very little out-movement to Sunderland. There was also very little private housing development in the town.

In the early post-war period the decline in coal mining caused an increase in the journey to work from the towns to the conurbations. The more rapid decline in Chester le Street resulted in fewer miners being resident in the town and a greater movement to Tyneside relative to that between Houghton le Spring and Wearside.* This close association with the conurbations was followed

* In 1951, 11% of all employed residents in Chester le Street worked in Newcastle and Gateshead compared to 7% of Houghton le Spring's employed residents who worked in Sunderland.

in the post-1960 period by an upsurge of private housing development in the two towns. This development was mostly to meet the needs of households who were moving out of the conurbations and of those who wished to move nearer the conurbations for employment reasons.

The towns are now clearly within the suburban belt of the conurbations; this is apparent from the rapid growth of private housing estates in the last five years and from the increase in the journey to work from the towns to the conurbations. In the chapters of this section some of the effects of the conurbations on the functioning of the towns have been described but for a fuller understanding of the interrelationship between the towns and the conurbations it is necessary to have a more detailed knowledge of the latter areas.

As a consequence of relief and economic factors there is a clear difference between the two towns in the size and type of settlements. The Chester le Street settlement is uni-nuclear while Houghton le Spring's is dispersed. Relief factors have played an important part in determining the present differences between the structures of the two settlements e.g. the restriction of further development in the old nucleus of Houghton le Spring after 1825. The coal mining history of the towns

has also had some effect on the nature of the settlement pattern. This was partly a function of the period during which the major 19th century expansion took place and secondly the fragmented or sporadic nature of mining settlements which resulted from the juxtaposition of residence and workplace. Though this was less so in the Houghton le Spring area than in West Durham, this has undoubtedly contributed to the dispersed settlement pattern of the urban district.

In Chester le Street U.D. the main settlement has a population of about 16,000 while there are about 3,000 in the two villages of Pelton Fell and Chester Moor. In Houghton le Spring U.D. the main settlement has a population of about 10,000 while about 20,000 are in the 8 to 10 settlements in the rest of the district. The larger settlements of Chester le Street and the concentration of central place activities in the town centre have led to a strong, thriving shopping centre. On the other hand, in Houghton le Spring the small size of the main settlement, the low accessibility with other settlements (because of relief) and the large number of retail establishments outside the town centre have led to a weak-shopping centre. The success of the smaller service centres outside the main shopping centre appears to have had the effect of reducing the attractiveness of the latter for the supply of non-food goods.

In their role as service centres the towns serve both the local and surrounding populations. The success of the towns in the provision of this function is dependent, firstly, on the particular influence of the regional centres, Newcastle and Sunderland, and secondly, on the functions provided at the surrounding settlements. A knowledge of the demand for and supply of consumer needs in the wider area would be necessary for a proper understanding of the nature and extent of the services provided at both Chester le Street and Houghton le Spring.

It became clear that for a full understanding of the interacting relationships between the towns and other urban centres, the conurbations and small urban settlements in North Durham, there would need to be a study of a wider area. The particular effect of the dormitory role of the towns was examined in fair detail by means of several surveys of new private estates and of a council estate. The second important function of the towns is the provision of services and one specific element of this, retailing and consumer movement, is examined in the wider urban complex of North Durham. Section 2 considers in detail the provision of retail establishments throughout North Durham/Tyneside and examines consumer movement in relation

to the scale of services or establishments provided. The scale of retail establishments provided and the number of consumers attracted by Chester le Street and Houghton le Spring will be better understood by comparing them in these respects with the regional centres and with other small service centres in the area.

SECTION 2

PART C

Chapter 1

Introduction

In a highly urbanised area like North Durham spatial relationships are very complex; there is a high degree of interaction and of criss crossing associations between centres. One important feature of urban functions is retailing and this section attempts to describe comprehensively the shopping characteristics of the area - the scale of retail establishments provided, the nature of the shopping trips made by consumers and the particular role and influence of centres at each level of the hierarchy. In short, this section first classifies centres into a hierarchy based on the scale of retail establishments provided and then investigates the use made of these centres by the consumer population. In this way it is possible to understand consumer behaviour in relation to two important variables: (a) the level of the hierarchy at which the good is provided, and (b) the distance consumers are prepared to travel to purchase a particular commodity or good.

North Durham is a heavily built-up area which is at the moment a suburban part of Tyneside/Wearside. It differs strongly, however, from normal suburban areas in that its history of coal mining has created a settlement pattern which is probably more typical of mining areas than of suburbs.

There is nevertheless a strong suburban current which is to a large extent replacing the old mining independence. Tied up with this change is the growing interrelationship between the North Durham settlements and the two conurbations. North Durham is also of special interest to a student of central place systems since the area is one in which there is probably a high number of service centres relative to the area's population; this is unquestionably a legacy of the independence and self-sufficiency of colliery villages in the past.

In order to understand the influence of the regional centres, Newcastle and Sunderland, and the nature of the less important roles of lower order centres, a shopping questionnaire survey was carried out in North Durham.

The main aims of the survey was to discover whether there was some correlation between the hierarchies that resulted from the demand for and supply of central place functions. To this

end two separate surveys were carried out - the first was a field survey of central place functions provided at all centres in the region (supply) and the second was a survey of the consumer shopping habits of a sample of households (demand).

Data from the field survey was used in the subjective classification of centres into a hierarchy. The consumer shopping survey was used to discover the ways in which the centres at each level of the hierarchy were being used. It was thus possible to discover the functions, populations served and trade area of each centre. Social class was considered to be an important variable affecting the shopping orientation of consumers and households were, therefore, divided into socio-economic groups in order to see what differences, if any, were to be found between households of different social class.

The consumer shopping survey presented many problems. The initial problem was whether an intensive survey was preferable to the extensive one that was finally employed in this project.

An intensive survey would have entailed the recording of all retail expenditure over a specified period by each member of a household in a diary or log book. The organisation, interviews, repeated contacts etc. needed for such a project would have been far beyond the resources that were available or could only have been done on a very limited scale. It was

also felt that it was necessary to cover a wide area in order to discover by comparative study the thresholds of populations and trade areas of the different grades of central places - two of the basic aims of the survey. The extensive survey method was, therefore, employed.

Besides the need to include the Houghton le Spring/ Chester le Street area and as many comparable settlements as possible (e.g. Consett, Stanley and New Washington) there were several factors which limited the extent of the survey area. The two most important factors were, however, the need for a certain degree of homogeneity in the area and a pre-determined limit to the number of households to be included in the sample.

The major built up areas of Tyneside and Wearside were the first to be excluded. The density of population in these settlements demanded a sample size that was beyond the resources available, while the character of this solidly built-up area differs strongly from the rest of the area. (see Fig.C.2)

The above excluded area and the county boundary decided the eastern, northern and western boundaries of the area (except in the south-west where the western half of the Lanchester R.D. was excluded because of the low population density.) The southern boundary was determined by the need to have a relatively self-contained area i.e. to include all areas which were part of the trade areas of centres already included. The northern

boundary of Durham City was chosen as a guide to the southern boundary of the survey area. Durham acts as a strong centre for most of the area to the south and so it would be reasonable to assume that an insignificant amount of trade would be imported into the survey area from the excluded area.

The self-contained nature of the survey area is fundamental to many of the conclusions drawn from the survey e.g. the threshold populations served by different grades of centres.

The sample* of households was a random selection taken from the Valuation List of urban and rural district councils. The sample size varied from 10% of parishes or wards with 100 households to 2.5% of those with about 3,000 households.

The questionnaire** was drawn up so as to cover the varied shopping needs of an average household. Thirteen retail items were included, based on the classification of shops by the Board of Trade in the Census of Distribution 1961. It was not,however, possible to cover all the Census groups - not-able ommissions were off-licences and confectioners, tobacconists and newsagents.

* The sampling method is described in the Appendix.

** A specimen of the questionnaire is shown in the Appendix.

The problems arising from the form of the questionnaire are varied in character. There was firstly the difficulty of including all purchases of any item under one heading; for example, groceries. The term 'weekly groceries' was used to cover the full range of purchases although as much as 40 to 50% of a household's groceries may be purchased on days other than the 'weekly' purchase day; the purchases may also be made at places other than the weekly centre.

There was also the difficulty in covering the full range of goods under one heading. 'Women's clothing', for instance, includes anything from an Evening Dress to the stockings of a vending machine. Since all replies to this item are of equal weight then one has to assume that 'women's clothing' meant the same to each person interviewed. In fact, it is quite obvious that it was generally interpreted to be a substantial purchase e.g. a dress or coat.

In the questionnaire, households were asked to indicate the last place visited for each item. In theory, for any item-group one would expect purchases to be made at several central places e.g. stockings may be purchased at the nearest Woolworth store but a hat may require a trip into Newcastle. The last place was, nevertheless, insisted on so as to avoid the problem of having several places indicated for each item with no hint as to the true proportion of expenditure made at each. Housewives are unfortunately

only too keen (or proud) to list the several relatively minor places visited for any item.

By insisting on the last place visited it was hoped that the sample size would be sufficient to detect the proportion spent in the less important centres. In cases where two centres were indicated it was assumed that half of the item's expenditure was made at each. There were sometimes quite genuine reasons for many of these e.g. for the item, kitchen appliances, there were households where both the cooker and refrigerator were bought last but at different centres.

As a preliminary to later analyses it was necessary to transform the sample households into the total number of private households of the parish or ward in 1961. All households were shown as purchasers of all items though in fact the actual number of purchasing households may have been far below e.g. only 48% of the sample households had shown purchases of 'cycles or prams'. Subsequent analysis of data was, therefore, concerned with the number of 'average' households in 1961.

The year 1961 was used because the 1961 Census was the only accurate record of the number of households in the small administrative units of parishes and wards. A crude correction for 1965 (date of the survey) could have been made by comparing the electoral registers of the two years but this was abandoned because it was hoped to compare the survey results with the 1961

Census of Distribution.

The transformation of the sample households into 'average' households (i.e. every household purchases every item) was necessary because:

(a) The Family Expenditure Survey (Min. of Labour 1962) which was used in later analyses only lists expenditure for 'average' households - i.e. the expenditure recorded by a percentage of the co-operating households was divided by the total co-operating households, thus giving an 'average' household expenditure

(b) in the computation of the populations that support different centres, it is more important to know how many 'average' households there are than the actual number of purchasing households. Since the latter varies markedly from one good to another there would be a clearer comparison between the population thresholds required for different goods if there was a constant measure - in this case, 'average' households.

The selection of a comprehensive list of shopping items was designed to reflect the varied shopping needs of an average household. For the satisfaction of all these needs it would normally be necessary for the household to visit several central places. It was, therefore, necessary to estimate the percentage of a household's (or ward's etc.) total expenditure that was spent at each of these centres.

In calculating the total expenditure of a household it was first necessary to transform purchases into money values since it was obviously unrealistic to allocate an equal unit value to each item e.g. the amount spent on T.V. sets cannot be equated with expenditure on furniture or cycles and prams.

In the calculation of the expenditure pattern of households the Family Expenditure Survey 1962 was used. Expenditure for each item in the questionnaire was estimated from the tables for the Northern Region for 1961/62 - these figures were then converted into 1961 values. The money values of all items are shown in Table C.22 in the Appendix.

It was, therefore, possible to calculate the percentage of a household's total expenditure that was spent at a particular centre. Expenditure was broken down into convenience goods (food) and durable goods (non-foods). Because of the inadequacy of the questionnaire the two groups cannot be added together to give the total expenditure. This is mostly because of convenience goods, since the expenditure of this group was covered by only two items (weekly groceries and butcher's meat) although according to the Family Expenditure Survey (types of goods) it forms about 60% of a household's total retail expenditure*.

* Convenience goods shops accounted for 66% of turnover (by establishments) in the Northern Region in 1961.

There were two ways in which it was intended to use the information published in the Census of Distribution.

The first was for the calculation of the average household expenditure for each item in the questionnaire. The Family Expenditure Survey was, however, preferred because item-expenditure was recorded in more detail. In the Census of Distribution sales were recorded by types of shops in all tables - except Table 8, part 14, which listed the sales of certain goods but it included only 'returns received' and was also not as detailed as the table in the Family Expenditure Survey.

The second intended use was for comparison with the turnover for centres as estimated from survey data. Comparison was found possible only on a very limited scale. This was because of

(a) differences between the per capita expenditures suggested by the two sources (see Regional Shopping Centres, p.169)

(b) the exclusion from the survey of certain goods covered by the Census

(c) the restriction of Census information to administrative units

(d) undisclosed information in some of the published tables

(e) the 'returns received' only coverage of the census, and

(f) variations in the expenditure pattern of households of different social class (see Family Expenditure Survey 1962 and Regional Shopping Centres).

It was, nevertheless, possible to recognise broad similarities between the survey and Census data (see pages 376 to 379 in Appendix).

In order to discover if there were any significant differences between households of different social class it was first necessary to divide households into socio-economic groups. In Britain the most satisfactory method is by either the type of employment or income of the head of the household. Information on either is not available from official sources and must be obtained through interviews.

In the present survey it was not possible to obtain such information because this information cannot be reliably obtained, if at all, in doorstep interviews and depth interviews were out of the question because of the time factor and the unprofessional nature of the interviewers (for the last reason the questionnaire had to be framed so as to avoid embarassing or private questions).

It was, therefore, possible to divide households into social classes only by indirect methods. These were based on the assumption that though there are in fact no attributes which are unique to any of the social classes, there are many which can be identified with a certain class. For purposes of this survey households were classified by the type of house occupied; the validity of this was further tested by car ownership rates.

Houses were divided into two broad types: council and private.

The private sector was further divided into three grades or groups according to their rateable values; these were:

(a) R.V. £57 and over

(b) R.V. £31 - £56

(c) R.V. £30 and under

(these, at present, are the divisions used by local councils in County Durham for legal and other purposes). Though council houses are found in all three rateable value groups (the vast majority being in the intermediate group), the nature of council tenancy is such that no significance can be attached to the rateable value of the house occupied.

Council houses - Council houses have been built during the inter-war and post-war periods primarily to provide a cheap but decent accomodation for the poorer households. Though including at one extreme professional and business men and at the other the very poor (old age pensioners), Council tenants are for the most part manual workers - the working class.

Private houses - Private houses are an extremely heterogeneous grouping - houses range in quality from slums to the most modern architect designed. A threefold division was consequently used:

Grade 1. (R.V. £57 and over) - New post-war houses are generally rated at £57 and over; on new private estates only bungalows at times fall under £57. This group would almost certainly include all houses built within the last 10-20 years and a fair number of inter-war houses.

Grade 2. (R.V. £31 - £56) - this intermediate group consists mainly of inter-war houses but with a fair number of post-war houses and a few built before the first World War. It is a very varied group.

Grade 3. (R.V. £30 and under) - the lowest valued private houses are generally at least 40-50 years old and are quite often scheduled for demolition in slum-clearance schemes. They are commonly found in the old mining settlements and the majority were formerly owned by the collieries and now by the National Coal Board.

There are two fairly homogeneous groups within the above fourfold division viz. council houses and the highest valued private houses (Grade 1). Though council houses and the highest valued private houses are not exclusively for the working class and the middle class respectively, it is nonetheless true that in this area council tenants adequately represent the working class while the occupiers of the highest valued private houses are in turn representative of the middle class.

The possession of a car is often used as an index of social class; the car is considered to be a commonplace in middle class households but not yet an accepted part of the working class household. For instance, from an analysis of the Family Expenditure Survey 1962, it was concluded that the ownership of a car was clearly tied to family income; there appeared to be a

'threshold' of about £20 per week above which the car was widely owned and below which it was not (Regional Shopping Centres p.175).

The rate of car ownership is thus directly related to the socio-economic class of households (£20 per week is about the minimum income of middle class households) and in North Durham it was found that it was also directly related to the type of house occupied. Table C.1. shows that the percentage of households owning cars decreased from 70% of those in the highest valued private houses to 27% of those in council houses.

Table C.1.

Type of house occupied	% owning cars
Grade 1. (R.V. £57 and over)	70
Grade 2. (R.V. £31 - £56)	42
Grade 3. (R.V. £30 and under)	31
Council	27
TOTAL	37%

The two extreme groups of households, council tenants and Grade 1 households were used in all analyses to discover what differences, if any, were to be found in the shopping habits of households of different social class.

Chapter 2

The Study of Central places - methodological background

Central place theory is concerned with providing explanations for the nature of the service functions performed at nodes central to consuming populations. Central place studies investigate the sizes and patterns of cities, the tertiary activities performed by cities of different sizes and thirdly, the consumer habits related to and focused upon 'central places'.

Central place studies have for the most part been concerned with three aspects of the central place system: central functions, trade areas and consumer shopping habits. There have been numerous studies of each of these three aspects of the system but very few which provide information on all three in any one situation - a notable exception is the study of Chicago by Berry (Berry 1963).

The present study in a limited way attempts to incorporate all three aspects. An independent survey was made of the functions provided at all central places in the area and these were then graded into five hierarchical levels. The shopping habits of consumers were investigated by means of a questionnaire survey and this information was used to calculate the trade area of each centre. It was, therefore, possible to estimate for each level of central places its range and population threshold - two of the basic concepts of central place theory.

Previous empirical research into central places and systems of central places has suggested that two principles explain their structure (See Berry 1962 p.90):

(a) the principle of centrality - central places seek out the point of minimum aggregate travel in a consumer trade area.

(b) the principle of accessibility - except in the very largest cities, consumers tend to travel to the nearest centre which offers the goods demanded.

Research has also suggested that the structure of the central place system is characterised by:

(a) a hierarchy - there is a hierarchy of several levels of central places. At each level, centres offer a similar range of goods; each higher level centre offers the full range of goods available at all lower level centres plus a group of goods not available at the next lower level.

(b) a 'nesting' of trade areas - this is such that the trade area of each higher level centre is a 'nest' in which cluster the trade areas of the lower level centres, including its <u>own</u> small trade area for these lower level functions.

A hierarchy of central places results because:

'(a) on the supply side, different commercial functions have different conditions of entry (thresholds), and

> thus demand minimum trade areas of different sizes for their support, and
>
> (b) on the demand side, consumers spend differing proportions of their income on different goods and services, and purchase them with differing degrees of frequency. Low threshold, high frequency functions are found in low level nucleations ('convenience goods centres), whereas high threshold, low frequency functions are found in higher level nucleations serving larger trade areas ('shopping goods centres')" (Berry 1963, p.21)

In an ideal central place system the location of functions (supply) is such that the aggregate travel by consumers for the satisfaction of their shopping needs (demand) is at a minimum. The two related concepts of frequency of purchase and population threshold together determine the ideal location of central places and central place functions.

On the demand side consumer needs can be divided into two very broad classes of goods:

(a) Convenience : goods which are purchased frequently, sometimes daily, and for which the consumer is, therefore, least prepared to travel. The high frequency requirements by households for such goods make it possible for establishments supplying these goods to be successfully supported by a small consumer population ('threshold'). These functions

are consequently found in lower level centres with small trade areas. (In the Census of Distribution this class of goods would be classified under 'grocers, other food dealers and confectioners, tobacconists and newsagents')

(b) Durable : goods which are required less frequently and for which a consumer may be prepared to make a specific shopping trip to a distant centre. The low frequency requirements for such goods has the effect of raising the population level required for the support of a specialist shop or establishment. These functions are, therefore, found in the higher level centres with large trade areas. (In the Census of Distribution this class would include all non-convenience goods).

In America the term 'shopping' is preferred to 'durable'. In the present study both terms are used with a slight difference in meaning. Durable goods are taken to include all non-convenience goods (as defined above); this use is in keeping with the generally accepted definition in Britain. 'Shopping' goods are taken to be all durable goods with the exception of chemist goods from the general heading of 'durable' goods since the consumer orientation for these differed strongly from that of the other goods of this class. 'Shopping' goods are essentially 'comparison' goods, goods for which the consumer is keen to shop around.

In theory consumer orientation is determined by the principle of accessibility i.e. consumers will shop at the nearest centre which provides the goods demanded. As a result of this each higher order centre has several trade areas - the largest for its most specialized function and the smallest for its lowest order goods. Within the large trade area of the most specialized function of the highest order centre, the regional centre, will cluster several small trade areas - those of lower order centres and its own small trade area for those lower order goods.

Central place theory also states that the size of a centre is a factor determining consumer orientation. As a result higher order centres have larger trade areas for lower order goods than lower order centres supplying the same goods. This is because on visits to high order centres consumers combine the purchase of lower order goods with their more specialist functions; this acts as a price-reduction.

Problems of application

The theoretical arrangement of centres in a hierarchy with each level serving a discrete population is not generally found in reality; a continuum of centres is more commonly observed. It is generally accepted that a hierarchical series of ranks is most like reality but that there are considerable empirical problems involved in distinguishing the various

ranks of the hierarchy. Some of the chief problems are*

(a) obtainable data are not often sufficiently sensitive to match the qualitative differences between centres of different rank

(b) much quantitative data ignores the relation of centre to trade area

(c) marginal centres which are changing rank fill in the gaps between the normative ranks of the hierarchy

(d) the hierarchy is in many ways an expression of perfect market knowledge, whereas many of the location decisions of traders are made on hunches, some of which result in stores operating in centres which are not sufficiently important to give the entrepreneur a normal return on capital invested.

'It is the multitude of individual units within a town that provides the basic problem for any study of its tertiary functions' (Davies, 1965, p.221). Davies discussed this and the importance of scale in central place studies and stressed the need for an understanding of 'the degree of generalisation inherent within the data' before the results can be adequately assessed.

* See Thorpe, unpublished manuscript

In theory accessibility and size of the centre are the two factors which determine consumer orientation. However, the breakpoint between the trade areas of adjacent competing centres is often blurred into an overlap zone by other factors e.g. personal preference or other forms of product differentiation. Other factors which may alter the theoretical consumer orientation of a particular area are the special location characteristics or organisational features of its central place functions, changes in retailing methods and consumer mobility and other non-quantifiable factors.

In the survey area the co-operative society presented by far the greatest difficulty. The co-operative store is a ubiquitous feature of retailing in the area - small stores and large stores are disposed in a pattern that at times defies reason. If co-operative societies catered only for the day to day needs of its members then the distribution of the stores would have had little effect on the central place system of the area, but their claim is to have a range of services to take care of every eventuality from 'the womb to the tomb'. Virtually every need can be satisfied at the local store; this includes goods that are not stocked at the local store but which can be obtained from the headquarters or the C.W.S. warehouse in Newcastle without a visit to these premises, by means of a catalogue. Consequently, there is often a problem in classifying a centre where a co-operative store is represented - at times

when it is the only establishment.

It is believed that the percentage of households in this area in co-operative membership far exceeds that in Britain as a whole. (It is estimated that about 62% of households in Britain are in co-operative membership - The Times, 3 June 1965). Whereas in 1961 the co-operative societies accounted for 12% of retail turnover in Britain, the proportions for Stanley (37%), Blaydon (36%), Houghton le Spring (29%) and Consett (24%) were considerably higher than the national figure.*

Frequently the distribution of a co-operative society's stores creates illogical consumer flows; for instance between the branch and head stores. Little is known of the effect on consumer orientation of this aspect of the co-operative society's method of operation; this is a feature of distribution which would well repay detailed investigation.

Durable goods purchases tend to be more directly related to the hierarchy of central places than convenience goods since specific shopping trips are frequently made for these. On the other hand convenience goods because of their lower 'comparison' element are at times purchased at unexpected levels of the hierarchy - there is always, however, the element of 'convenience' in the place of purchase even if this is not at first apparent.

* There is no reason to suspect that the co-operative societies were less important in the other administrative areas for which this information is not available.

Two significant changes in food retailing methods have had considerable impact on consumer shopping habits in this area and throughout much of Britain. The first was the rapid growth of supermarkets and other self-service food shops (including the conversion of counter-service shops); this has had the effect of centralising grocery purchases and has generally resulted in a loss of trade in the lowest order centres which are unable to compete in price with the larger and more modern establishments of the higher order centres. The second new feature is the mobile shop and this has had the opposite effect to supermarkets since in fact no shopping trip is made.

The particular effect on central places of the increasing turnover of mobile shops is uncertain, in fact there appears to be two contrary views. The minority view is that it strengthens the higher order centres because most of the mobile shops are operated by shops based in these centres - in the survey area this is certainly not true since mobile shops are virtually all owned by co-operative societies whose stores and headquarters are not generally located in such centres. The majority view is that in addition to the food turnover lost by the weekly shopping centres, a certain percentage of lower order durable goods purchases is diverted to the regional centres. In the New Town of East Kilbride the large number of mobile

shops operating in the town had the effect of preventing the establishment of permanent shops dealing in the same goods in the Town Centre.*

Coupled with changes in retailing methods there have been changes in the shopping habits of households. With particular reference to food purchases this has come about through the increasing proportion of households that own refrigerators (and/or deep freezes) and cars. The possession of a refrigerator is an important factor in reducing the number of visits that a household makes to food shops - this has the effect of centralising purchases and strengthening central places. In 1962, however, though one-third of all households in Britain owned a refrigerator, in the North of England it was less than one-fifth (Min. of Agriculture, 1962 p.31).

Another important but non-quantifiable factor influencing consumer orientation is the work status and workplace of the housewife since this affects the range and 'convenience' of a housewife's shopping trip. Surveys in the centres of cities have all shown that a high proportion of visits to shops originate from the workplace. In a survey in the centre of Manchester one-third of all shopping trips had started from

* There were at that time 50 mobile shops operating in the town - they were all selling foodstuffs (see Cumbernauld p.66)

work (Regional Shopping Centres, 1964, p.279). In a survey of the Penshaw private estate it was found that a significantly lower proportion of working wives than non-working wives purchased their groceries locally - 33% as against 62% (see page 139).

Added to the above there are various minor factors which may also influence consumer orientation for lower order goods, food in particular. These are households whose purchases are made by telephone, housewives who combine their weekend shopping with a visit to their parent's homes, those attracted by long trading connections etc. Together these 'irrational' shopping trips form a small but significant percentage of the total.

Chapter 3

Shopping Centres and Area Character

Virtually the whole of North Durham lies within the Durham coalfield and all but the south-eastern section within the exposed coal measures. The western half of the Lanchester R.D. is an exception and has an agricultural economy.

The economy of the area by the end of the 19th century was fairly uniformly dominated by coal mining and its allied industries thus giving the area a certain basic homogeneity. However, within the area there are remarkable differences in settlement patterns which have to a large extent influenced the present orientation of settlement for the satisfaction of social, entertainment and shopping needs.

The various settlement patterns in the area arose from differences in the periods of mining colonization and in the quality of the coal seams. The presence or absence of a pre-mining nucleus was also an important factor in determining the form of the 19th century settlement. The west Durham area which was the first to be colonised also had relatively thin seams. Thus in this area 'where the outcropping or shallow seams were exploited relatively early and by a large number of pits, many of them shortlived, a straggling, sprawling settlement pattern has resulted'(Smailes 1960 p.192) - the Stanley area is a typical example of this type of settlement. In contrast, the larger pits of east Durham led to a more compact

and larger settlement pattern e.g. Hetton le Hole. (See Smailes 1960 Fig.42(a) and (b)).

Within the Durham coalfield the larger settlements of the 19th century by virtue of their size or modality became the service centres for the area. Some of these were the developed nuclei of old-established centres e.g. Chester le Street and Houghton le Spring, while others were the creation of the mining and industrial colonisation of the 19th century e.g. Consett and Stanley which were no more than hamlets previous to the 19th century.

Fig.C.2. shows built-up areas and the irregularity of the settlement pattern from which broad features of the population distribution can be recognized - this is to be expected in a mining area. The large collieries of the south-east are responsible for the high density of population in the Houghton le Spring/Hetton le Hole area while the absence of mining in the western half of the Lanchester R.D. accounts for its very low density of population. As a result of worked-out coal seams and the implementation of planning decisions there has been a stagnation or decline in many of the mining villages and a concentration of development in and around the towns. Nevertheless, the present settlement pattern of the area is still very much in its 19th century mould and sporadic settlements are a feature of the population distribution.

Recently the area has undergone considerable change in

its economic base. During the inter-war period and at a progressively stepped-up rate since the Second World War, there has been a decline in coal mining. The closure of many pits in the area has led to the stagnation of the mining villages and the commuting of the miners. This has greatly changed the traditional immobility of mining households. The replacement of coal mining by light industries has also had some affect on the location of new residential developments. The Hailsham report, for instance, emphasized the need for planned growth to take place where economic factors were most favourable - this would have the effect of increasing the population of the eastern half of the area.

A distinct feature of the area's changing economy has been the growing influence of Tyneside/Wearside. At the present time the area is very dependent on Tyneside and Wearside and there is every reason to believe that this dependence will increase in the future. There are two complementary forces at work:

(a) the employment opportunities in the conurbations are attracting an increasing number of workers from the area, and

(b) the 'move to the suburbs' has become both necessary and desirable for the people of the conurbations. The latter is evident from the strong attraction of Tynesiders and Wearsiders to the new private estates in the area - the large majority of the wage earners in these households continue to work in the conurbations.

The hierarchy of central places in the survey area

The several levels of central places within the area and the surrounding region were identified from an extensive field survey of central place functions in the Tyneside region. This was an independent survey carried out by D.Thorpeof the Geography Department. Further field work was necessary in the southern part of the survey area which was not included in the above survey.

A summary of the classification method is as follows*: Information collected for each centre was broken down into the number of food shops and non-food shops. The number of non-food shops was taken as a meaningful indication of the size of a centre and its functional variety and was, therefore, used in the computation of its 'centrality score'. The total of non-food shops was weighted by a score derived from the presence of three particular types of traders:

(1) non-food multiples,

(2) banks,

(3) grocery multiples and co-operatives

* Details of the index of centrality and the classification of centres are contained in 'The Shopping Centres of the Tyneside Urban Region and large scale Grocery retailing' D. Thorpe,1966.

Based on their 'centrality scores', central places in the Tyneside Region were classified into a hierarchy of five levels or grades:

Level of Central Place		(U.S.)
Regional Centre -	Newcastle Sunderland (Sub.Reg.Centre)	(metropolitan)
Grade A.	Major Shopping Centre	(Regional centre)
Grade B.	Suburban Centre	(Community)
Grade C.	Small suburban and village centre	(Neighbourhood)
Grade D.	Neighbourhood	(Convenience)

In this study it was necessary to sub-divide Grade A centres, shopping goods centres, into Major Shopping Centres (Grade A.1.) and Small Shopping Centres (Grade A.2.)

Fig.C.3 shows the distribution of all central places within the survey area and of the Grade A and higher-order centres within the Tyneside Region. Of the Grade D centres only those with four or more shops are shown.

There are certain functions which are characteristic of centres at each level of the hierarchy. Also certain goods or establishments are added at each higher level of the hierarchy to the full range of goods available at lower level centres.

Neighbourhood centres ('D' centres)

At the lowest level these centres consist of an isolated convenience or corner shop; the larger centres are clusters of

convenience goods shops. The number of shops in neighbourhood centres is generally less than 15, the large majority of which are food shops.

Only the largest centres have an adequate range of food shops (no supermarket), a general hardware shop, a chemist*, and a medium/large co-operative store (generally a branch through the headquarters of a few societies are found in some of the centres).

A typical medium-sized neighbourhood centre would have a grocer, a butcher, a general hardware dealer and a post office/confectioner.

Small suburban (and village) centres ('C' centres)

There are fifteen such centres in the area. The majority are found in medium-sized villages some distance from higher order centres; a few are part of the built-up area of the large towns (usually through the coalescence of a village nucleus with that of the town).

At this level there is always a full range of convenience goods shops. All centres have a grocer (rarely a supermarket), a butcher, a baker and a chemist - in four of the centres there were two chemists. Branches or headquarters of co-operative societies are found in all centres.

* see page 247 for location of chemist shops

A typical "Small Suburban" centre would have between 15 and 35 shops, the majority being food shops. In addition to the four shops listed above there are usually a radio and T.V. shop (including electrical goods), a ladies' and children's outfitters, a wool shop or small draper and a wall paper or decorator's shop. The services of a bank and a dry cleaner are also available. Other services provided are hairdressing (ladies' and men's) betting shops and often a cinema/bingo hall.

Suburban centres ('B' centres)

The "Suburban Centres" are all found in large settlements and function at this level either because they fill the interstices between higher order centres or are unable to develop higher order functions. This is often because of proximity to higher order centres or relief restrictions.

Differences between Suburban and Small Suburban centres are of two kinds

(a) a strengthening of the range of convenience goods shops, notably the addition of supermarkets,

(b) an addition of a wider but irregular range of non-food shops. Before describing the functions added at this level it is important to point out that there is an increased scale in the co-operative services provided at this level. In each of the five suburban centres there is a very large co-operative store; four of the centres are the headquarters of co-operative societies, each with several branches in the area. In fact, two of the societies based in these centres are among the largest

in North Durham.

The suburban centres have between 35 and 50 shops, just under half being non-food. Among the shops commonly added at this level are a shoe shop, a florist, a pet store and an irregular assortment of specialist shops which may include variety stores, furnishers, cycle shops and electricity or gas showrooms. Among the services added or more generally available at this level are cafes, cinema/bingo halls and libraries as well as the less frequently required medical services like dental surgery and the related services of opticians.

Small shopping centres ('A.2' centres)

The Small Shopping Centres differ from the next lower order centres mostly in the range and number of shops supplying durable goods. Because of the greater selection of durable goods shops and the large scale provision of food shops (especially supermarkets operated by multiple organisations), Small Shopping Centres function as weekly shopping centres i.e. they are able to attract consumers from outlying areas for the specialised week-end shopping.

It must be pointed out that there are only two such centres within the area and it would, therefore, be impossible to describe in detail the typical functions found at this level. It is equally clear, however, that the two centres differ significantly in type from the suburban centres while at the

same time being unable to function adequately in the role of the next higher level (major shopping centres).

At this level of the hierarchy are added electricity and gas showrooms, a woolworth store and a men's tailor as well as a wide range of shops which are found in only a few centres at the lower levels of the hierarchy; included in this group are furnishers, off-licences, cycle shops and bookstores.

Major shopping centres ('A.1' centres)

"Major Shopping Centres" perform the same role as "small Shopping Centres" viz. specialist centres for weekend shopping. Differences between the two levels are to be found in the scale of durable goods shops provided. Major shopping centres have a 'complete' range of specialist shops supplying a wide range of durable goods; the centres are especially noted for the number of important non-food multiples represented.

Among the important functions added at this level are small department stores, jewellery shops, music and record shops and a stall market. In addition there is a significant increase in the number and size of shoe shops, furnishers and men's tailors.

The regional centres

The regional centres are characterised by a heavy

concentration of specialist shops - a mixture of shops available at lower order centres and those available only at this level of the hierarchy.

There are, therefore, numerous shops specialising in the supply of women's, men's and children's clothing, shoes, furniture, jewellery and other shopping goods. Added at this level are large department stores, usually occupying multi-storied buildings, and certain fashionable or luxury goods shops e.g. furriers.

Functional structure of selected centres*

Neighbourhood centres

There is little in the way of an average neighbourhood centre; functionally the more distinctive centres are the larger ones.

The large neighbourhood centres can be divided into those that cater for little else but convenience goods and those that offer a fair range of durable goods. The essential difference between the two types of large neighbourhood centres is the presence of a large co-operative store in the latter (see page 213 for the distorting effect of co-operative stores on the central place system).

Burnopfield, Craghead and Dipton (Collierley ward) are the three centres which stand far above the other neighbour-

*. Fig.C.4 shows the location of the more important centres.

hood centres for the provision of durable goods (see Fig.C.5). In each of the three centres besides food shops there is little else but a large co-operative store and a chemist (part of the co-operative store in Burnopfield). In Burnopfield there are 13 shops (includes two non-food), in Craghead 15 shops (includes three non-food) and in Dipton 15 shops (includes 5 non-foods). Besides a chemist the most common non-food shop is the general hardware shop.

New Herrington is typical of the large neighbourhood centre which provides little else but convenience goods. Of the 17 shops in the centre five were non-foods. The non-food shops consist of a chemist, two general hardware dealers, a ladies' and children's outfitter and a small wall paper shop. The medium-sized co-operative store has recently closed (in 1966) - there appeared to be few durable goods purchases made in the centre at the time of the survey and this was probably a contributory factor in the decision to close the branch store.

Small suburban (and village) centres

At the small suburban level the significant functions added are those supplying durable goods - notably chemist shops and radio and T.V. shops. The 15 small suburban centres are divided into five groups based on the number of consumers served for durable goods: very strong (3 centres);

strong (4 centres); average (2 centres); weak (3 centres); and very weak (3 centres). Note that although the strong centres for durable goods also serve large populations for food there was in fact a very low correlation between the number of households served for food and the number served for durable goods.

Langley Park (Esh parish), Sacriston and Shiney Row are the three very strong centres. All three centres are located in large settlements which are relatively far from shopping goods centres - at least three miles from the nearest centre.

Sacriston and Langley Park are older established centres located in large mining villages of static population. Shiney Row, on the other hand, has recently expanded as a result of the rapid growth of population in the surrounding area; its further expansion since the survey suggests that it may rise slightly in status.

All these centres are well stocked with shops but Shiney Row because of its recent expansion appears to have a slight superiority in both food and non-food shops. For food Shiney Row has a large supermarket (none in the other centres) and three bakers (one in each of the other two centres). Shiney Row's superiority is best seen in its range of non-food shops and services. Among the non-food shops only Shiney Row has a cycle shop and a florist. Among its service establishments

Shiney Row has three dry-cleaners, a coin-operated launderette and a library - Sacriston and Langley Park have each one dry cleaner.

Chopwell, Leadgate, Fence Houses and Easington Lane are the four strong centres. All four centres are located in large settlements and, except for Chopwell, are within two miles of a higher order centre. The population around Chopwell, Fence Houses and Leadgate had declined in the previous 15 years while in Easington Lane it increased slightly.

Leadgate and Easington Lane represent the declining and rising centres respectively in this group. In all there are 35 shops in Easington Lane and 32 in Leadgate. In Easington Lane there are 14 non-food shops which include three radio and T.V. shops, three wool shop/drapers, two hardware shops, one wall paper shop; there was also an off-licence and two dry-cleaners. In Leadgate there was one of each of the above establishments; there were only eight non-food shops in the centre.

Pelton and Ryton are the two average centres. They are located in fairly large settlements but are not well stocked with shops - in the case of Pelton this is possibly because of its proximity to Chester le Street, a major shopping centre; Ryton is under the dominance of Newcastle, the regional centre.

In Pelton there are 19 shops (includes five non-foods) and in Ryton 21 shops (includes 9 non-foods). Ryton's complement of shops was increased substantially by the construction of a block of about 8 shops in 1960. There had been a sharp increase in the settlement's population during the previous 15 years and this has undoubtedly helped the centre to increase its status; the shops provided are, however, of modest size and there is little likelihood of a further rise in the centre's status.

Winlaton, Rowlands Gill and South Moor are the three weak centres. Winlaton and Rowlands Gill are areas in which population is increasing (approximately 5% and 20% respectively during the intercensal period 1951-61) while in South Moor there had been a sharp loss of population during the previous 15 years (a loss of about 15% between 1951 and 1961 and about 10% in the following four years as suggested by a decline in the number of electors).

Excluding the population factor, Winlaton and South Moor are affected by their proximity to higher order centres (within a mile) while in Rowlands Gill although there are two supermarkets (rather exceptional at this level) there has probably been little demand by the incoming population for the satisfaction locally of their durable goods needs (there is little else but a fairly large co-operative store for the supply of durable goods).

In Winlaton there are 16 shops including 5 non-foods. There is a fairly large co-operative store and among the few non-food shops a chemist, a general clothing shop and a wall paper shop. There is also a bank and a dry cleaner.

Blackhill, Washington Station and Lanchester are the very weak centres. Blackhill and Washington Station are within 1½ miles of shopping goods centres while Lanchester is a small/medium village with an insufficient population (about 1000 households) to support more than the lowest threshold functions appropriate to this level of the hierarchy - its distance from other higher order centres was probably a contributory factor to its acquisition of these functions e.g. a chemist. Washington Station is in an area of declining population (loss of about 20% during the previous 15 years.)

There are two centres in Blackhill, the larger contains 25 shops (includes 7 non-foods) and the smaller 15 shops (includes 5 non-foods). The smaller is equivalent in grade to a neighbourhood centre but together both centres are of the small suburban grade. No distinction was made by residents of the area and because of their proximity to each other both centres are considered one. There was an adequate number of food shops including three bakers and two butchers. There were two hardware shops and one small

furnisher. Interesting evidence of the low demand for durable goods is to be seen in

(a) the provision of only three sections in the branch of the Consett co-operative society - grocery, greengrocery and butchery

(b) the closing down of the branch of the Leadgate co-operative society in 1966.

Suburban centres

Blaydon and Hetton le Hole are the two strong suburban centres; Birtley and Annfield Plain are moderately strong while Crawcrook is a relatively weak centre. As has already been noted all centres have a very large co-operative store.

Blaydon has 48 shops, including 21 non-foods. Two important non-food multiples are represented here: Woolworth and Caller's (furnishers). Other important establishments include a shoe shop, a pet shop, a florist, a cycle shop and a camera/photographer's shop. There are also two shops supplying general women's wear and two ladies' and children's outfitters.

The Blaydon co-operative society was founded in 1859 and was probably the first co-operative society to be formed in the North East. About 1876 the co-operative store is described as follows:

> 'Blaydon has the most remarkable store next to that of Rochdale ..... The store has grown from a house to a street' (Holyoake, 1885, Vol.2. p.349.)

The society has grown considerably and is among the largest in the area. This is evident from the size of its main shop in Blaydon, about 17,000 sq.ft. (includes first floor), and its large membership total, 24,000 members (Blaydon, Official Guide, 1962). See also Fig.C.17.

Hetton le Hole has two shopping areas, the larger is in Front Street (27 shops) and the other in Market Street (18 shops) just over 100 yards away. Though the two centres are physically separate no distinction was recognised by households in the area and the two centres were, therefore, considered as one. The Market Street area contained the very large co-operative store, the Hetton Downs Co-operative Society, while the Front Street area contained the larger and more recently added shops.

Among the non-food shops in Hetton le Hole were two shoe shops, one furnisher, two radio and T.V. shops, one florist, three wall paper/decorator's shops and two ladies' and children's outfitters. There was also a gas showroom, three banks and three dry cleaners. The overall impression was that of a prosperous centre.

Birtley's centre appears at the same time both strong and blighted. Its complement of shops suggests that it is a thriving centre but the visual image is one of blight. The centre has 40 shops of which 18 are non-foods. It is

undoubtedly a strong food centre; there were 7 grocery multiples and co-operatives in the centre (same as Blaydon). To the south side of the centre, however, there is a blighted zone. In October 1966 this area had six shops that were closed down and a parade of shops which was obviously difficult to let (almost two years after completion nine of the thirteen shop units were still unoccupied).

The centre, is nevertheless, a fairly strong centre. There is an electricity showroom, 4 radio and T.V. shops, 2 cycle shops, 2 florists, 1 pet shop and an off-licence. There is also a good range of services including 3 banks, 2 dry-cleaners and a small coin-operated launderette. The Birtley co-operative society occupies a full block and caters for a wide range of goods including a shoe section.

Annfield Plain is located in a mining area of static population. Its shopping centre though well stocked with shops appears to be on the downgrade. There are 35 shops of which 17 are non-foods. The more important establishments are a gas showroom, a shoe shop, a general draper, a pet store and a small jeweller/watch repairer. Its services include two banks and two dry cleaners. By far the most significant establishment is the very large co-operative store, although the size of the store is probably a result of its being the headquarters of the largest co-operative society in North Durham (number of branches). See Fig.C.17.

Crawcrook is the smallest of the suburban centres and contains 33 shops of which only 13 are non-foods. The shopping facade suggests a static centre and in fact the centre lacks the more recently added fringe establishments at this level. Also its co-operative store does not offer the range of goods available at the other suburban centre. Its range of shops is small: a shoe shop, a wall paper shop and two radio and T.V. shops are the main non-food shops. There is one bank and one dry-cleaner.

Perhaps the most significant establishment in the centre is a large radio and T.V. shop which judging by its size would be more appropriate in a major shopping centre. The presence of this shop was very evident from the questionnaire survey. The influence of this shop can be seen from Table C.19 and its trade area is described in page 332.

Small shopping centres

There is a striking difference between the two small shopping centres of Houghton le Spring and New Washington; the former is an old-established centre while the latter has only recently grown in status. As a result Houghton le Spring's shopping facade of old and new shops contrasts with the new blocks of shops in the recently expanded centre of New Washington.

The two centres contain an adequate range of lower order goods. Grocery multiples are well represented in both centres

although New Washington (10) has a larger number than Houghton le Spring (6) mainly because of the newly developed shopping blocks - universally attractive propositions for multiple organisations. The two towns differ most in the provision of higher order non-food shops.

In Houghton le Spring the more important non-food shops consist of a shoe shop, a bookstore, a small department store a pet store, a cycle shop, two men's tailors, two furnishers and three radio and T.V. shops. Services provided include three banks, three dry cleaners, a coin-operated launderette, a cinema and a bingo hall. Besides Woolworths and Burtons, there are no important non-food multiples in the shopping centre.

New Washington has more non-food multiples and service establishments. Besides a Woolworth store there are two multiple furnishers (Caller's and Smith's); other shops include two shoe shops, a men's tailor, a radio and T.V. shop, a cycle shop, a florist and a women's outfitter, there are five banks, six dry cleaners and a cinema/bingo hall.

In Houghton le Spring there are 59 shops (includes 33 non-foods) and in New Washington 52 shops (includes 23 non-foods).

Major shopping centres

Consett, Stanley and Chester le Street are the three major shopping centres. Stanley is appreciably smaller than the other two.

Consett has 109 shops of which 61 are non-foods. The shopping centre is spread over several streets - around the market square and bus station, along Front Street, Middle Street and Newmarket Street - the fragmentation of the centre, the size and number of shops plus the many multiples present, give the centre an air of high status. A weekly stall market is held on Saturdays.

Chester le Street has 108 shops of which 66 are non-foods. Except for a few shops on either side of the covered Cong burn at the north end of the town, all shops are located on the Front Street, stretching for just over half a mile. Chester le Street has slightly more multiples, both food and non-food, than either of the other centres. It also has a wider range of functions especially the higher order functions e.g. shops selling jewellery and musical instruments. A stall weekly/market is held on Fridays.

Stanley has 70 shops of which 31 are non-foods. Except for a jewellery shop the shopping centre has virtually the same range of shops as the other two centres. Differences are mostly in the number of shops of each type provided at the centre. For instance, there are only two furnishers in Stanley (a third has recently closed) compared to four in Chester le Street. There is also no stall market - the old market hall is now in the backwater of the shopping centre and is divided into several shop units.

All three centres have a large co-operative store.

Regional centres

Newcastle is the regional centre while Sunderland should more appropriately be called the sub-regional centre.

In the Central Business District of Newcastle there are about 700 non-food shops compared to about 300 in Sunderland. Newcastle has more important multiples and more specialist shops than Sunderland. For the lesser important regional centre goods Newcastle has about twice as many shops as Sunderland e.g. jewellery 22 against 11, while for the more specialist regional centre goods there are more than twice as many shops in Newcastle e.g. 12 furriers against 4 in Sunderland.

It is apparent that though Sunderland provides a range of shops that are only obtainable at the regional centre level, relative to Newcastle it lacks a full complement of the highest threshold functions.

Chapter 4

Consumer shopping habits and the hierarchy of central places

The present study, it is believed, fairly accurately describes the nature and influence of central places within a 'densely populated urbanized area in the shadow of a regional centre'. It is axiomatic that ideal areas do not exist in reality and that local characteristics may so affect consumer orientation that universal concepts deduced from such a study may be invalid. In this study allowance is made for certain peculiar characteristics of the area.

The area's peculiarities can be traced back to the mining era of the 19th century and later. The irregular settlement patterns, the self-contained nature of the mining villages (miners were often cajoled or coerced into getting their supplies from the colliery store), the growth of the co-operative movement after 1860 and other related factors led to illogical service orientations and much criss-crossing of associations. At the present time this has been largely broken down by the increased mobility of the population. While the motor car and the frequent bus services have been chiefly responsible for this, the closure of many collieries and the commuting of miners to other areas have helped to erode the psychological

and traditional immobility of mining households.

Before proceeding to an analysis of consumer movement in the area it is important to state that it was possible to purchase all items (in the questionnaire) at each level of the hierarchy. This was because of:

(a) the range of goods covered by each item, e.g. women's clothing.

(b) the diversification of shops, particularly at the lower levels of the hierarchy.

(c) the complete service of co-operative stores

(d) the availability of all lower order goods at higher order centres.

Table C.2. compares the distribution of food and non-food shops throughout the Tyneside region* with the percentage of custom attracted to centres at each level of the hierarchy.

It is apparent that the shopping goods centres('A' and higher) attract a higher percentage of customers for both convenience and durable goods than is suggested by the percentage of such shops located at these centres.

* Taken from Thorpe, 1966 p 67 . The area covered excludes part of the survey area and includes Tyneside/Wearside.

(Note that about one-quarter of the non-food shops in the Tyneside region are contained in the regional centres). The convenience goods centres ('B' and lower) all attract a lower percentage of custom for both convenience and durable goods than their percentage share of the area's shops.*

Table C.2

Percentage of shops and expenditure at each level of the hierarchy

	FOOD		NON-FOOD	
	Custom	Shops	Custom	shops
Regional centre	3.0	22.2	48.9	57.2
Grade A	41.8		36.8	
Grade B	13.7	18.4	5.5	14.7
Grade C	21.9	26.2	6.6	18.0
Grade D	15.2	33.2	2.2	10.1
Mobile shop	4.4	-	-	-
	100.0	100.0	100.0	100.0

The percentage distribution of shops shown in Table C.2. varies slightly from that of the survey area. It would appear that relative to the Tyneside region there are fewer 'B' centres and more 'C' centres in the area; this would be equivalent to an increase in the percentage of shops in 'C' centres, 5% of foods and 3% of non-food

* Fig.6 illustrates the differences in consumer orientation for convenience and durable goods.

shops, and a similar decrease in the percentage of shops in 'B' centres. It is essential however to include the shops in Newcastle and Sunderland in order to arrive at a meaningful distribution; the adjustment of 'B' and 'C' centres would adequately account for local variations.

The above comparison of the population served with the number of shops provided confirms that the drawing power of a shop is directly related to the grade of centre in which it is found. The average pattern is such that the number of consumers (or turnover) attracted by a single shop is highest in the regional centres and lowest in neighbourhood centres. Table C.3 shows in simplified form the relative drawing power of shops at each level of the hierarchy below the regional centre level (Note that the table does not show the relative drawing power of convenience vs. durable goods shops).

Table C.3

The relative attractive power of a shop at each level of the hierarchy

Shop	A	B	C	D
Convenience	12	6	4	3
Durable	15	6	4	3

Table C.3 is based on the actual shops located in

each centre. The average size of shops in 'A' centres would logically be larger than that of 'C' centres. For instance, a supermarket located in a 'C' centre may show a turnover equal to a similar sized one in an 'A' centre but the average food shop in a 'C' centre will most likely have one-third of the turnover of the average food shop in an 'A' centre, as suggested by Table C.3.

Consumer Orientation

Convenience goods

Weekly groceries and butcher's meats are the two convenience goods included in the questionnaire.

Food purchases are of the low threshold, high frequency type and are theoretically made at the nearest available centre. There is very little comparison to be made between centres and even between shops. Though the arrival of the supermarket has created a temporary 'comparison' element between supermarket and non-supermarket centres, the rapid spread of these shops has had the overall effect of lowering differences (except for neighbourhood centres from which they are generally absent).

Three further factors which contribute to the concentration of food purchases at the nearest available centre are (a) the frequency of purchases in Britain, primarily because of the low ownership rate of refrigerators and cars (the lower ownership rates in County Durham suggest

that it is even more frequent in this area than elsewhere in the country) (b) the bulky nature of the goods; the average weight of groceries purchased each week by working-class households is estimated to be 62 lbs (see 'Cumbernauld' p.10) and (c) the slightly perishable nature of some foods e.g. meats.

Though there are often economies to be made by travelling to a larger centre for groceries the tendency is to make use of the nearest centre. Thorpe in his study noted that a hierarchy of centres appears chiefly because of the different requirements of multiple traders before they are prepared to establish a branch in any given centre. Consumers on the other hand may fulfil all their needs at the nearest centre; for most centres, even of the lowest rank, are able to supply a fairly full range of groceries.

The bulk of food purchases were in fact made at lower order centres. Convenience goods centres ('B' and lower) accounted for 52% and 51% respectively of the area's purchases of meats and groceries. A further 3% of households bought their groceries from mobile shops and 8% their meats. The regional centres, on the other hand, attracted only 3% of households for each of the two food items. See Table C.4.

Table C.4

Percentage purchased at each level of the hierarchy

Item (100.0)	% Reg.Centres	% 'A' Centres	% 'B'Centres	% 'C'centres	% 'D' centres
Groceries	3.0	43.4	14.0	21.1	18.5*
Meats	3.1	37.5	13.0	24.6	21.8*
Chemist goods	4.0	46.0	14.4	28.5	7.1
T.V.sets	25.0	53.8	10.3	9.1	1.8
Hardware	27.0	47.5	10.0	10.7	4.8
Kitchen Appliances	36.1	53.1	5.1	4.2	1.5
Cycles/Prams	43.3	47.6	4.2	4.3	0.6
Shoes	45.7	39.0	6.1	5.9	3.3
Furniture	58.4	34.6	3.7	2.3	1.0
Men's Clothing	59.3	33.7	2.3	3.0	4.7
Children's Clothing	62.3	30.6	2.9	3.0	1.2
Jewellery	69.6	25.9	2.2	1.4	0.9
Women's Clothing	70.7	22.3	2.6	3.0	1.4
Food	3.0	41.8	13.7	22.1	19.4*
Durables	48.9	36.8	5.5	6.6	2.2

* Includes purchases from mobile shops viz. 3.1% for groceries, 7.7% for meats and 4.4% for food.

Durable goods

Included in durable goods are chemist goods which are of the convenience type. They are convenience goods in so far as they are normally bought at the nearest available centre But the higher threshold population required and the lower frequency of purchases account for the general absence of a chemist shop at the lowest level of the hierarchy (neighbourhood centres)*.

Of the 40 neighbourhood centres with four or more shops only 10 contain a chemist shop while in each of the 15 small suburban centres there is at least one such shop. The suburban centres generally have at least two and the shopping goods centres at least four chemists. Table 6.4 shows that 7% of households bought their chemist goods at neighbourhood centres (Grade D) compared to 29% that obtained theirs at small suburban centres (Grade C). It is interesting that the percentage of households attracted to neighbourhood centres for chemist goods was lower than that for both weekly groceries and meats; the reverse was the case for small suburban centres which were able to provide adequately for the needs of the local population

* Note that the distribution of chemist shops may be controlled and limited by the Pharmaceutical Society

and also to attract consumers from the surrounding area.

Chemist goods are potentially the most localized of consumer goods (the location of a chemist shop is often linked with a doctor's surgery). When chemist shops are present local centres generally retain a higher percentage of chemist goods expenditure than that of any other good. Convenience goods centres attracted 50% of purchases of chemist goods while the regional centres accounted for only 4% - almost the same as that for the food items; differences between consumer orientation for chemist goods and food can be accounted for by differences in the distribution of the two types of shops. See Fig.C.7 a to c.

The shopping goods (durables excluding chemist goods) revealed a gradation of consumer orientation to the levels of the hierarchy of shopping centres. Thus the percentage of households shopping in the regional centres varied from 70% for jewellery to 27% for hardware; at the other end of the hierarchy neighbourhood centres attracted less than 1% for jewellery and 5% for hardware. Fig.C.7 d to l.

The ten shopping goods can be divided into six hierarchical groups roughly corresponding to the group of goods added at each of the six levels of the hierarchy of central places. Table C.5 shows the gradation of shopping goods.

Table C.5

Shopping goods			specialist shops
(1) hardware	-	available at	neighbourhood centres
(2) T.V.sets	-	"	small suburban centres
(3) Shoes	-	"	suburban centres
(4) Kitchen app; cycles/prams	-	"	small shopping centres
(5) furniture, men's clothing;children's clothing	-	"	major shopping centres
(6) jewellery, women's clothing	-	"	regional shopping centres

N.B. Compare with Table C.4

At the neighbourhood level hardware and small electrical goods are the main shopping goods supplied. The general hardware shop is commonly found in small villages. Shoes are the only other significant purchases made at this level; shoe shops are not found at this level but there is frequently a shoe section in the large co-operative stores.

At the second level of the hierarchy (Small Suburban) hardware and T.V. sets are the two most important purchases; the radio and T.V. shop is the most distinctive feature of trading at this level. Other important purchases are shoes (no specialist shops), kitchen appliances and cycles/prams. Shoes are purchased at co-operative stores while the other two goods are generally sold in radio & T.V.shops

which are typical examples of the degree of diversification in retail outlets at this level.

At the suburban level of the hierarchy the most important additional purchase is that of shoes. A shoe shop is the function commonly added at this level. Other important purchases at this level are kitchen appliances, furniture and cycles/prams; specialist shops for one or more of these goods are found at one or more suburban centres. At each centre the influence of the large co-operative store is very evident.

Added at the small shopping centre level are shops specialising in the supply of kitchen appliances and cycles/prams. Kitchen appliances can be regarded as typical of the specialist goods available at these centres. The presence of electricity and gas showrooms as well as a number of furnishers provides a wider choice and supply of such goods than at any lower level centre. The need for after-sales service for household appliances ensures adequate protection from the regional centres while the standard product and services of electricity and gas showrooms is a further factor contributing to the importance of these centres for the supply of these goods.

Major shopping centres are specialist centres for the goods added at the next lower level (viz. kitchen appliances and cycles/prams) but are also able to serve large populations

with goods for which the regional centres normally have a dominant influence; these are furniture, men's clothing and children's clothing. These are items where fashion and the 'comparison' element become important factors determining the place of purchase. The growth of multiple tailors and furnishers has, however, resulted in a degree of standardisation in these goods and this has allowed the strong development of retail outlets in the major shopping centres. The regional centres are nevertheless the most important suppliers of these goods.

There would appear to be a special case for including children's clothing in the next higher grade along with women's clothing since the two items are often sold in the same shops and are both purchased by the housewife. Children's shops are, however, more frequently found at this level.

The regional centres dominate the area for the supply of jewellery and women's clothing. Expense, choice and fashion combine to make these goods preeminently regional centre goods. The regional centres offer a wide selection of specialist shops and large department stores catering for these items. The large department store,

a typical feature of retailing in the regional centre, is especially important for the supply of women's clothing (women's, girls' and infants' wear accounted for 38% of turnover in department stores in 1961 - see Census of Distribution part 14.).

Population thresholds

In accordance with central place theory each level of the hierarchy offers certain goods and services not available at lower order centres; for the support of these specialist functions a certain threshold population is required (condition of entry). Berry and Garrison have shown that a hierarchy of centres (with discrete levels of population) emerges even though thresholds of business establishments are arranged in a continuum (Berry and Garrison 1958). Berry accounts for this by allowing firms to earn 'excess profits'. The implication is that though the minimum threshold population required for the support of a certain function may be 'n' people, the actual number served (or required) in the higher levels of the hierarchy may be in excess of the postulated minimum.

It is observed that for most central place functions the size and turnover of firms increase with increasing grade in the hierarchy. A corollary of this is that to be

economically viable firms located in the higher levels of the hierarchy need a higher threshold of population. The present survey does not investigate the thresholds of specific functions but an illustration of this phenomenon is possible in the case of chemist shops. Table C.6 compares the average population served by a chemist shop at each of five levels of the hierarchy.

Table C.6

Populations served by chemist shops

	Total households served	No. of shops	Average per shop
Major shopping centre	27,980	14	1,930
Small shopping centre	10,430	8	1,300
Suburban centre	13,650	11	1,250
Small suburban centre	23,400	19	1,230
Neighbourhood centre	5,660	9	630

Though at the lowest level of the hierarchy a chemist shop appears to be successfully supported by about 600 households, in the middle levels of the hierarchy the population served seems to be 12-1300 households while in the major shopping centres the population supporting each shop is about 2,000 households. These population levels are those actually served (i.e. the effective population, see page 255) and may, therefore, include an

element of 'excess profit' but the implication is that these 'excess profits' arise because higher thresholds of population are required at higher levels of the hierarchy e.g. the entry of Boots or T.White's only at the shopping goods level of the hierarchy.

Limitations of the present survey prevent further analyses of this sort but other functions would almost certainly show similar gradations of population thresholds. For instance, it appears that the population threshold for a butcher's shop (including a butchery section in a co-operative store) at the lowest level of the hierarchy is about 200 households while at the intermediate levels ('B' and 'C' centres) it is 5-700 households and at the shopping goods level about 900 households.

Centres of similar grade providing roughly the same goods and services can be expected to serve similar sizes of population, in spite of any differences which may be found in the settlement pattern or density of population in their respective areas. The trade areas served by such centres may, however, show great dissimilarities since the trade area and range of a centre is essentially a function of density of population. For instance, an 'A' centre within a large urban area may serve the same number of people as a comparable centre in a less urbanized area

(similar thresholds of population) but its trade area will be smaller; furthermore, the proportion of custom from the surrounding population which it is able to satisfy in competition with the regional centre will differ from that of the other centre in a less urbanized area.

Two concepts are here involved in the description of a centre's dependent population:

(a) the effective population i.e. the population actually served by a centre for its specialist goods and services (threshold population). This population level will be common to all centres of similar grade.

(b) the umland population i.e. the total population within the area which is dominated by a centre for its specialist goods and services (trade area population). The umland population is a factor of local topography and population density and may vary appreciably between centres of similar grade.

Neighbourhood centres

The main function of centres in the lowest level of the hierarchy is the supply of convenience goods. Their specialist functions are the supply of groceries and meats; the former being the lowest observable central place function in the form of the 'isolated' or 'corner' shop.

The 'corner' shops serve a population of about 100 households or less with a small range of groceries. The larger neighbourhood centres have a strong co-operative representation and serve several hundred households for groceries and meats. The population served by neighbourhood centres ranges from 100 to 900 households. It seems clear that even for their most specialist functions the largest neighbourhood centres serve populations below 1,000 households which could be regarded as the maximum for this level and the minimum for the next higher level of the hierarchy.

The neighbourhood centres draw their customers from a trade area population (umland) that is generally under 1,000 households.

Small suburban centres

The specialist function at this level is undoubtedly the supply of chemist goods; chemist shops are found in all the centres and the largest populations are served by centres for chemist goods.

The populations served by the centres for chemist goods is between 1,000 and 2,000 households; three centres fall below that range and two exceed it. Of those that fall below no centre is supported by less than 900 households while of those that exceed the range, the highest is 2,200.

There are exceptional factors which account for the variation from the norm at this level.

The small suburban centres generally serve umland populations of 15-2500 households.

Suburban centres

There are few specialist functions added at this level of the hierarchy; the few added functions are not available in sufficiently large numbers to dominate the hinterland e.g. shoe shops. The largest populations served by these centres are, therefore, for the same goods as the next lower level centres. They are distinguished however, from the lower level centres by the greater number (e.g. more chemist shops) and special nature of their retail outlets (e.g. a greater incidence of supermarkets).

The stronger suburban centres serve populations of between 2,500 and 3,500 households for convenience goods (also chemist goods). One of the five centres at this level is a particularly weak centre for convenience goods; this is because it is located in a smaller settlement than the other centres.

The suburban centres draw their customers from a trade area population of 3-6,000 households; only one centre falls below this range.

Small shopping centres

As has already been noted, these centres are in fact in a sub-class, being weak 'A' or shopping goods centres. They vary significantly from the next lower level centres in that their largest populations are those served with certain shopping goods e.g. T.V. sets.

For their specialist shopping goods the small shopping centres are supported by 4-6000 households. Since there are only two such centres in the area the range indicated may not be very accurate. Table C.18 indicates, however, that 4,000 households is probably the minimum required for the support of the range of functions supplied at these centres.

The small shopping centres draw their customers from a trade area population of 6-12,000 households.

Major shopping centres

These centres are most clearly differentiated from all lower order centres by their wide range of specialist shops supplying shopping goods. The largest populations are served with lower order shopping goods e.g. kitchen appliances, T.V. sets, cycles/prams and hardware. For these goods, the centres [illegible] generally serve, at least 10,000 households.

Including the full range of goods for which the major shopping centres dominate their hinterland the threshold population for a centre at this level would appear to be 8-10,000 households.

At this distance from the regional centres in order to attract the necessary threshold population, major shopping centres require an umland population of at least 15,000 households. A range of 15-20,000 households would appear to be adequate for the support of major shopping centres.

Regional centres

For their specialist functions the regional centres serve the whole region i.e. there are certain goods which are available only in the regional centres. Any attempt to define the threshold population of a regional centre would be beyond the scope of this study. The populations served by the regional centres can only be appropriately expressed in this study as a percentage of the area's total population and it is obvious that for their specialist functions they will capture virtually 100% of such custom.

Chapter 5

Consumer Orientation at each level of the hierarchy

'The expected net benefit a consumer derives from visiting a centre is a function of the probability he assigns to satisfying his demands on the trip, less transport costs, costs involved in shopping within the centre, and the opportunity costs foregone in not making the trip to some competing alternative centre' (Berry 1963 p.112).

The percentage of consumers attracted to a particular centre from any area is thus dependent on:

(a) the functions provided at the centre

(b) the (economic) distance to the centre

(c) the (economic) distance to competing alternative centres.

All centres serve the largest population and the widest area with their most specialised functions; all other functions attract fewer consumers and have a smaller trade area either because they are adequately available at lower order centres or because they are more likely to be bought at higher order centres which offer a greater selection. As has already been pointed out, even at the lowest level of the hierarchy certain centres are able to provide a full range of goods (see page 241).

The regional centre

Regional centre services are provided both at Newcastle, the regional centre and Sunderland, the sub-regional centre. For the computation of the average influence of the regional centre, purchases made at both centres are combined and distance is taken to be that to the nearer of the two centres by road.

In accordance with central place theory we should expect the regional centre to provide two types of goods

(i) regional centre goods i.e. those goods which require a very high threshold population and are thus not found below the regional centre level of the hierarchy, and

(ii) all lower order goods.

Within each type of good (as used in the questionnaire) there is a range in quality so that a certain minimum of purchases must be made at the regional centre i.e. regional centre goods. For instance, even though a jewellery shop may exist in a lower level of the hierarchy, it may be necessary to travel to the regional centre for a particular piece of jewellery. This minimum is not a purely theoretical figure but it cannot be calculated without elaborate studies of product distribution,; it is however, essential to the concept of a regional centre supplying

the highest order goods over a considerable distance. The actual minimum percentage that must be purchased in the regional centre varies, of course, with the type of good; it will, for instance, be less for T.V. sets than for jewellery. The second role of the regional centre is the provision of lower order goods. The regional centre is itself the largest supplier of lower order goods and has a larger trade area for these goods than lower order centres. The range of a good in this category is determined mostly by competition with other centres.

It is important to note that the presence of a range of quality within each type of good as used in the questionnaire is a problem with which empirical work is faced. In theory it is possible to isolate such ranges in quality and to term each quality type a specific and separate good. Each order good gives rise to its own trade area - the lower order trade areas nesting within the higher order trade areas and all contained within the trade area of the most specialized regional centre function. A twofold division of goods into lower order and regional centre means that for each type of good included in the questionnaire there are two curves representing fall-off in trade with distance (see Fig.C.8(a)). The curve for the regional centre is at a low level and shows a very gradual fall-off

with distance; the curve for the lower order good is initially at a high level and shows a rapid fall-off. A combination of the two curves for one type of good leads to the curve shown in Fig.C.8(b); beyond the lower order trade area there is a plateau which is in effect the percentage of purchases of a particular type of good which must be made in the regional centre.

Fig.C.9 shows the curves for the whole of the survey area. Unfortunately the Ryton/Blaydon area is rather exceptional and accounts for the pronounced shelf up to eight miles, in Fig.C.10 the effect of this has been removed by excluding the seven wards in the two urban districts which were 5-8 miles from Newcastle. (Appendix, pages 380 to 383 , for a description of consumer shopping habits in this area). The resulting curves are nearer the theoretical form and these are described below.

The curve for the average of all durable goods shows a steady and fairly steep fall-off up to 9 miles and then a very gradual fall. At five to six miles the percentage of total durable goods expenditure spent in the regional centre is just over 60%. At nine miles the regional centre attracts about 40% of durable goods expenditure while at fifteen miles the percentage drops to only 30%.

There is, therefore, a clear break between 8 and 9 miles from the regional centre; beyond this there is very little change in the percentage of expenditure attracted to the regional centre. Between 8 and 9 miles of the regional centre, major shopping centres compete effectively with the regional centre and though unable to dominate that part of their hinterland which is nearer the regional centres they are dominant in the areas which are further away; from this area (beyond 9 miles) the regional centre is able to draw only its regional centre custom.

The forms of the curves for the different types of goods vary with the proportion of the total purchases which is of regional centre class. There are four types of curves:

(a) jewellery and women's clothing - the two highest order goods. The curves are at a high level initially (85-90%) and show a sharp fall up to 9 miles and then a plateau of between 50 and 60% (see also Fig.C.11).

(b) furniture and men's clothing - less dominant regional centre goods. They show the same form of curve as the two regional centre goods except that the inital level of attraction is lower (75-80%) and the plateau occurs between 40 and 50%.

(c) hardware, kitchen appliances and T.V. sets - these are lower order goods and so the percentage of custom attracted to the centre is low at all distances. The percentage attracted from as near as five miles is only 40-45%. The plateau level starts earlier at 8 miles (6 miles for T.V. sets) and is between 10 and 20%. (see also Fig.C.12).

(d) Shoes, children's clothing and cycles/prams are interesting in that they show a continuous fall-off. These seem to be intermediate types of goods for which the plateau level probably occurs beyond the survey distance i.e. beyond fifteen miles. Shoes, for instance, are rather exceptional since they are purchased by a significant number of households at all levels of the hierarchy but fashion would make it an attractive regional centre purchase and it, therefore, shows an enlarged lower order curve.

No part of the survey area is more than 15 or 16 miles from a regional centre and it is obvious that the maximum range of the regional centre extends beyond this. Nevertheless, it is far enough to confirm that there is a minimum proportion of durable goods expenditure which is made at the regional centre. In this area the minimum seems to be not much lower than 30%. Added to this minimum there

is the lower order trade attracted by the regional centre in competition with lower level central places. It was seen that the lower order trade is mainly drawn from the area within 8 or 9 miles of the regional centre since beyond this point major shopping centres are effective in cutting off the flow of lower order trade to the regional centre (see also pages 276 to 279).

In estimating the likely proportion of durable goods expenditure that would be spent in the regional centre two steps are necessary:

(i) An estimate of the minimum percentage that would be spent in the regional centre, to some extent disregarding distance; this would vary mainly with social class and car ownership. For instance, council households in the area seem to spend a minimum of between 25 and 30% in the regional centres while Grade 1 households spend about 40%. The difference between car and non-car households may vary by as much as 10%. (For detailed analysis of differences in shopping habits between households of different social class, see pages 299 to 308).

(ii) An estimate of the proportion of lower order goods that is likely to be bought in the regional centre - this can satisfactorily be estimated by an application of a gravity

formula e.g. a modified form of Reilly's law of Retail Gravitation as used by Lakshmanan (see Lakshmanan and Hansen, 1965, p.135). The variables used in such a formula would, of course, depend on available data e.g. retail selling space or turnover.

Fig.C.15 shows the percentage of durable goods expenditure of each ward or parish that is attracted to the regional centre. Only 15 administrative units (total 72) spent less than 30% in the regional centre. These are all 8 miles or more from the nearer regional centre and in all but one of these units the proportion of grade 3 and council households exceeded the survey area average (68% of all households). The one exception was Consett North Ward which includes the town's shopping centre and also had half of its households in the two lowest grades of houses.

Major shopping centres

There are three classes of goods which may be purchased at major shopping centres. These are:

(i) lower order goods

(ii) 'A' centre goods

(iii) regional centre goods (available in a smaller range and at non-specialist shops).

Fig.C.14 shows the theoretical (and actual) consumer orientation to a major shopping centre for the three classes of goods.

The range of the specialist goods ('A' centre) is the theoretical limit of all lower and higher order goods. Towards the maximum range of the specialist goods specific trips for the purchase of lower order or regional centre goods are very unlikely; the cost-benefit to be derived from the purchase of either of these goods would result only if they are purchased along with 'A' centre goods.

Consumer orientation to major shopping centres for the three classes of goods is such that:

(a) lower order goods attract the highest percentage of households within the short distances, say two miles, since competition will be at a minimum. Included in this class are groceries, meats and chemist goods.

(b) 'A' centre goods attract a lower percentage of households from the immediate area than do lower order goods but at distances of two miles or more they attract a higher percentage than any other class of goods. Included in this class are kitchen appliances and cycles/prams.

(c) regional centre goods generally attract the lowest percentage of households from throughout the trade area but have much the same range as the specialist goods. Included in this class are jewellery and women's clothing.

Table C.7(a)

Major Shopping centres

Distance	% of Food expenditure attracted Stanley	Consett	Chester le Street	Average
0-1 mile	85.4	79.3	94.4	86.1
1-2 miles	31.0	55.4	64.3	53.3
2-3 miles	23.9	47.9	32.6	32.3
3-4 miles	6.5	10.0	8.4	8.2
4-5 miles	5.3	6.1	2.3	3.4
5-6 miles	0.5	1.7	0.1	0.8

Table C.7(b)

Major Shopping Centres

Distance	% of durable goods expenditure Stanley	Consett	Chester le Street	Average
0-1 mile	55.8	61.5	62.8	60.0
1-2 miles	44.9	53.7	47.8	49.3
2-3 miles	23.7	42.2	28.8	29.2
3-4 miles	13.6	7.4	14.7	13.1
4-5 miles	7.6	9.0	3.5	5.0
5-6 miles	0.6	3.0	1.0	1.7

Table C.7 indicates that major shopping centres have an intensive trade area that is roughly within three miles. Within this zone convenience goods are more frequently bought by households than durable goods, though it is well to remember that durable goods include a wide range of goods and some of these attract a higher percentage of consumers than convenience goods e.g. chemist goods. Compare Figs. C.18 and C.19.

Beyond the 3 miles zone the percentage of consumers attracted for convenience goods is lower than that for durable goods. Beyond four miles both convenience and durable goods attract a small percentage of consumers but durable goods continue to attract a higher percentage of custom and have a significant but small influence at a distance of six miles.

Percentages of consumers attracted are shown in the Appendix Table C.31 for the average of all major shopping centres and for Chester le Street which because of the distribution of population and of competing centres in the surrounding area is considered to be a more balanced centre than either Consett or Stanley (see page 314).

Weekly groceries adequately represent the convenience goods group. The major shopping centres serve between 85% and 95% of the households within a mile radius; for these goods the percentage decreases rapidly and at 3 miles it is

about 35%. There is little or no attraction of households which are more than five miles from the centres.

Chemist goods show virtually the same curve as other convenience goods. There is, however, a higher attraction of those households within three miles of the centres for chemist goods; for instance 98% of the households within a mile of Chester le Street.

The percentage of consumers attracted to the centres for durable goods is initially lower than that for convenience goods but there is a smaller fall-off rate and a greater range. Fig.C.15 shows that there is a direct fall off with distance up to about five miles and suggests that the strong influence of a major shopping centre stops at a distance of 5 to 6 miles (for convenience goods it is 4 to 5 miles).

The centres attract about 60% of the durable goods expenditure of households within a mile, at three miles the percentage is just under 30%. The fall-off rate increases progressively with distance from the centre so that the percentage of durable goods expenditure attracted by the centres is more than halved at each successive mile zone beyond the 3 mile belt.

Of the shopping goods, kitchen appliances, T.V. sets, cycles/prams and hardware are non-regional centre goods.

Throughout the trade area of the centres these four goods attract a higher than average (durable goods) percentage of consumers. Within a mile of the shopping centre between 75 and 85% of consumers are served with these goods and at three miles between 30 and 40%. Kitchen appliances are the specialist goods provided at this level and they attract a higher percentage of consumers at all distances than any other shopping good. Hardware on the other hand is available at the lowest level of the hierarchy and though it has a high initial attraction (equal to kitchen appliances) there is a rapid fall off in the percentage of consumers attracted to the centre for these goods; beyond three miles it attracts no more than the average for all durable goods. See Fig.C.23.

Furniture, shoes and men's clothing are the 'average' purchases made at major shopping centres. The percentage of consumers attracted for these items oscillates about the average for all durable goods.

Jewellery and women's clothing are the two regional centre goods and are consequently the least purchased at the major shopping centres. The percentage of consumers attracted to the centres is very low - even from those within a mile. Women's clothing for instance, is purchased by about 35% of consumers within a mile radius. See Fig.C.22.

Children's clothing is again an intermediate item. It attracts a below average percentage of consumers but is not quite low enough to be grouped with women's clothing and jewellery.

The above description of consumer orientation to the major shopping centres ignores the part played by competing centres. In a densely populated area competition is often the most important factor which determines 'economic' distance. Figs.C.15 and C.16 show the percentage of food and durable goods expenditure attracted to the major shopping centres as well as to each of the three competing classes of centres:

(a) other shopping goods centres ('A') and

(b) all convenience goods centres ('B' and lower)

(c) the regional centres.

Shopping goods centres in the region are generally about six miles apart, except in West Durham where relief and the distribution of population restrict the growth of such centres. Distances from the major shopping centres as shown in Figs.C.15 and C.16 are, therefore, not necessarily in the direction of a shopping goods centre i.e. 3 miles from a particular centre may not necessarily mean 3 miles nearer a competing shopping goods centre. For instance, Chester le Street is surrounded by at least five shopping goods centres, each approximately

6 miles away, and is the nearest approximation to full competition at this level; even so distance away from this centre is not always towards a competing alternative centre e.g. Witton Gilbert, 5 miles away, is itself 4 miles from Durham the nearest shopping goods centre.

Somewhere between 3 and 4 miles from the centres competing shopping goods centres are able to capture a larger percentage of custom than the major shopping centres. This is theoretically what we should expect in a region where shopping goods centres are approximately six miles apart. (See Table C.32 in the Appendix). The most important thing to be noted is the extent of the interpenetration of the trade areas of the competing alternative centres. The overlapping of trade areas is discussed in pages 293 to 295 .

Theoretically convenience goods centres are situated in the interstices of the shopping goods centres and the strength of these centres is directly dependent on their distance from shopping goods centres. Competition with shopping goods centres is in the form of the retention of a percentage of the lower order goods expenditure of the local population. Maximum competition from lower order centres, can therefore, be expected for lower order goods and at intermediate distances, 3 or 4 miles. Thus convenience

goods and chemist goods show the greatest loss to lower order centres. Of the shopping goods, hardware, T.V. sets and shoes are those most often purchased at these centres in competition with the major shopping centres. The least competition is in jewellery and furniture. (See Table C.32 in the Appendix).

Convenience goods centres attract the highest custom from consumers who are three or four miles from major shopping centres. At four miles from major shopping cetres as much as 70% of convenience goods expenditure is retained by convenience goods centres. Of the shopping goods, hardware is most often purchased at these centres but the maximum percentage of expenditure retained seems to be about 40%.

Regional centre competition is in two forms. Firstly, there is the minimum of regional centre goods which can only be bought at the regional centre level, and secondly, the regional centre, as the largest supplier of lower order goods competes directly with the major shopping centres for such custom. The regional centres attract an insignificant percentage of convenience goods expenditure and these can be ignored. The same can be said for chemist goods but these are included in the computation of the total durable goods expenditure.

The curves representing the percentage of durable goods expenditure spent in the regional centres show a rise with increasing distance from the major shopping centres. This is not because there is a rise in all directions but because the increased attraction to the regional centre in the nearer section of the centre's hinterland is not balanced by any fall in the farther section. Note that beyond 9 miles from the regional centre, the approximate location of major shopping centres, there was little appreciable fall off in the overall attraction of durable goods expenditure to the regional centre.

To illustrate the effect of regional centre competition, the hinterland area of Chester le Street was divided into two sections. One section was 'towards Newcastle and Sunderland' and included all areas which were less than 9 miles from either regional centre and the other was 'away from Newcastle and Sunderland' and included the rest of the hinterland i.e. all areas which were 9 miles or more from either regional centre. Chester le Street is itself 8-9 miles from Newcastle, the nearer regional centre.

It is important to note that distance from Chester le Street (Fig.C.16) in either section does not necessarily mean as many miles nearer or further from the regional centres e.g. Birtley is three miles from Chester le Street

and is nearer to the regional centre than Washington which is five miles from Chester le Street (households in the two settlements would be included among those at 3 and 5 miles away respectively in Fig.C.16(b)). This would account for the fact that expenditure in the regional centre does not increase constantly with increasing distance away from Chester le Street in the 'towards' section.

Important differences in consumer orientation between households in the two sections were:

(1) Chester le Street exerted a stronger influence in the 'away' section. This was most evident for durable goods but even for convenience goods there were differences which could be accounted for by the percentages attracted to the regional centres.

(2) The percentages of consumers attracted to the regional centres for durable goods varied insignificantly with distance in the 'away' section but increased rapidly in the 'towards' section, particularly for the first four miles when there was a definite shortening of distance from the regional centres (note that no part of the survey area was nearer than 4-5 miles from either of the regional centres and, therefore, distances of more than 4 miles from Chester le Street in Fig.C.16(b) could not be directly towards the regional centres e.g. Washington).

In the 'towards' section the regional centre's share of durable goods expenditure rose from a minimum of 39% for those households within a mile of Chester le Street's shopping centre to 63% for those about four miles from the shopping centre. In the 'away' section the attraction of durable goods expenditure to the regional centres was unrelated to distance and varied from a minimum of 27% to a maximum of 35%.

Consumer orientation in the Chester le Street hinterland that is 'away from Newcastle and Sunderland' is most interesting in that it represents an area which is near enough to be strongly influenced by the regional centre but sufficiently far away to escape its dominant influence; in other words the average influence which this study investigates.

In the 'away' section of Chester le Street's hinterland the regional centre is used in its capacity as a regional centre rather than as a large centre for the lower order goods. This is seen in the constant level of attraction to the regional centre at all distances. It is interesting to note that at four miles where convenience goods centres are at their strongest and shopping goods centres at their weakest, Chester le Street and the three classes of competing centres each attract about 25% of the durable goods expenditure.

Consumer orientation in the 'away' section of Chester le Street's hinterland is close to the theoretical form of a highly urbanized area without the complicating factor of very close proximity to a regional centre.

Small shopping centres

Table C.8 shows that small shopping centres are weak at all distances for durable goods and beyond one mile for convenience goods (food). Beyond three miles they draw virtually no custom; consumers attracted to the centres from this distance are of a casual or accidental nature.

Table C.8

Small shopping centres

	% of Food expenditure			% of durable goods expen.		
	New Washington	Houghton le Spring	Average	New Washington	Houghton le Spring	Average
0-1 mile	84.6	72.2	78.7	35.8	31.8	33.9
1-2 "	34.7	16.3	21.2	24.6	14.6	17.4
2-3 "	1.4	5.2	3.9	1.6	6.4	4.7

The average percentage of consumers attracted for food is about 80% of those within a mile of the shopping centres. Between one and two miles the percentage falls sharply to about 20% and at three miles it is less than 5%. The low percentage of custom drawn from households at more than a mile from these centres is indicative of the basic weakness of these centres. See also Fig.C.18.

The average percentage of durable goods expenditure attracted to these centres is about 30-35% of households within a mile, 15-20% of those between one and two miles and about 5% of those between two and three miles. Compared to major shopping centres there is no generally dominated area (occasionally, they may have an area which they dominate for certain goods); the average consumer attraction for durable goods at this level is very similar to that of the major shopping centres beyond a two-mile radius. See Fig.C.19.

Chemist goods are again different from other durable goods. This is mostly because of the high percentage of households attracted from the immediate area, almost 95% of those within a mile. Beyond this the percentage of households attracted is about the average for durable goods.

The four non-regional centre shopping goods, T.V. sets, kitchen appliances, cycles/prams, and hardware, attract a higher than average percentage of households at all distances. Within a mile the centres serve between 50 and 70% of all households; between 1 and 2 miles they serve 30 to 40% and about 10% of those between 2 and 3 miles (See also Fig.C.23).

Furniture, men's and children's clothing and shoes are items which would normally be purchased by a significant

number of households at this level of the hierarchy (see major shopping centres) but because of the dominance of the regional centres the small shopping centres attract a lower than average percentage of households. Even within a mile of the centres, only 15 to 25% of households are served for these items and between 2 and 3 miles less than 5% of households are attracted to the centres.

Jewellery and women's clothing are regional centre goods. Because of the dominance of the regional centres there are no specialist jewellery shops in the centres. The percentage of consumers served by these centres is, therefore, very low, less than 10% of households within a mile radius. At three miles, the attraction is negligible. (See also Fig.C.22).

The small shopping centres suffer severe competition from the regional centres. Table C.33 in the Appendix shows that the regional centres capture about 60% of the durable goods expenditure, of households within a mile of the shopping centres (cf. 35% for the major shopping centres). The weakness of the small shopping centres, caused by competition from the regional centres, makes them even more vulnerable to competition from centres at all levels of the hierarchy.

The percentage of custom attracted to the regional centres varied with the type of good. Attraction to the

regional centres was expectedly low for food, less than 5% of households. For durable goods the attraction to the regional centres was generally high but varied with the type of good, for instance, within a mile of the centres 90% of households were attracted for jewellery but only 20% for T.V. sets (for the major shopping centres the attraction to the regional centres was approximately 60% and 10% respectively).

Suburban centres

Suburban centres are essentially convenience goods centres. They differ strongly from all higher order centres (including small shopping goods centres) in that convenience goods attract a larger number of consumers than any of the shopping goods; their maximum support is for chemist goods.

For convenience goods the suburban centres serve between 70 and 90% of the households within a mile. Between 1 and 2 miles the centres attract 15 to 20% of households. There is no significant attraction beyond this. Note that the attractive power of centres at this level is equal to that of small shopping centres for convenience goods, except that the latter have a more extensive trade area i.e. some influence beyond two miles. Chemist goods have a similar trade area as convenience goods. The percentage of consumers served is, however, slightly higher e.g. 90% of households within a mile.

Table C.9 shows the outlets for the durable goods expenditure of the five areas containing suburban centres. It indicates that the percentage of custom captured by the suburban centres from households within a mile (approximated by ward or parish boundaries) is between 25 and 35% - not far below that of the small shopping centres. (Note that for Birtley the figure is 19% but one-third of the parish's population is in a settlement, Barley Mow, which is separate from the main settlement and is just under two miles from the shopping centre; the consumer attraction from this area is markedly lower than from the rest of the parish).

Table C.9

Durable goods expenditure

	%	local suburban centre %	regional centres %	shopping goods centres %	other convenience goods centres %
Hetton le Hole ward	(100.0)	33.7	46.9	18.1	1.3
Crawcrook ward	(100.0)	30.2	64.3	0.5	5.0
Annfield Plain ward	(100.0)	26.3	28.2	43.8	1.7
Blaydon ward	(100.0)	25.8	71.5	0.9	1.8
Birtley parish	(100.0)	19.4	60.6	19.0	1.0

Table C.10 shows the average percentage of consumers within a mile-radius that is attracted for different shopping goods. Note the gradation from hardware (50-60%), available at neighbourhood centres, to clothing furniture and jewellery (<10%), available at major shopping centres or regional centres. The table emphasizes the fact that suburban centres are convenience goods centres. What the table is unable to show however, is the degree of variability between centres. The presence of an electricity or gas showroom, a furnisher, a large T.V. shop or a cycle shop may raise the attractive power of a particular centre far above the average figure (see pages 332 to 334).

Table C.10

Average % of households (within one mile) served

Goods generally available at		%
(neighbourhood level)	Hardware	50-60%
(small suburban level)	T.V. sets	40-50%
(suburban level)	Shoes	30-40%
(small shopping level)	Kitchen appliances	20-30%
(small shopping level)	Cycles/prams	10-20%
(major shopping level)	Furniture, men's & children's clothing	under 10%
(regional centre)	jewellery, women's clothing	

As Table C.9 shows the suburban centres are dominated either by regional or shopping goods centres. Two of the centres are relatively far from shopping goods centres and are under the dominant influence of a regional centre; two others are under the influence of both a regional centre and a shopping goods centre, while the fifth is more than 9 miles from the nearer regional centre and is dominated by a shopping goods centre.

Small suburban (and village) centres

At this level of the hierarchy centres are able to dominate the immediate area only for convenience goods and chemist goods. The centres normally draw consumers from within a radius of a mile but often extend their influence to two miles in areas where they are more accessible than other comparable or higher order centres (see Fig.C.20 and C.21).

For convenience goods the strong centres capture between 60 and 80% of the sales generated by consumers within a mile; the weaker centres may capture only 40 to 50% of this custom. Chemist shops are the specialist functions available at this level and the centres attract the highest number and percentage of consumers and serve the widest area for these goods. The majority of the centres

attract over 80% of households within a mile while, even the weakest centres are able to retain over 50% of this custom.

The percentage of durable goods expenditure retained by small suburban centres is generally very low. The approximate trade area (mile radius) of these centres can be taken to be their ward or parish boundary. Of the 15 such centres, 6 retained less than 10% of the durable goods expenditure of their ward or parish, 7 retained between 10 and 25% and only two exceeded this proportion and retained 29% and 36% respectively.

Among the shopping goods two items are frequently bought at small suburban centres: hardware and T.V. sets. The average percentage of the custom within a mile which is retained by these centres is 50% for hardware and 25% for T.V. sets.

Only three other shopping goods are bought in significant quantities at this level; these are shoes, kitchen appliances and cycles/prams. There are no specialist shops supplying these goods but they are all available in co-operative stores while the latter two are also available in radio and T.V. shops and large hardware and electrical goods stores. On an average the centres retain 15 to 20% of shoe sales generated by the immediate

population and 10 to 15% of kitchen appliances and cycles/prams. As at the suburban level all other shopping goods are purchased by fewer than 10% of households within the immediate area.

Neighbourhood centres

The average neighbourhood centre attracts virtually no custom from beyond its immediate area, less than half a mile in the case of centres located in large settlements* and the whole of the settlement (not more than a mile) where these are situated away from other built-up areas. The percentage of consumers attracted from this area is a function of the size of the centre (great internal range at this level), the nature of the settlement and its distance from higher order centres.

Neighbourhood centres function primarily as food centres. There were 33 neighbourhood centres which served at least 100 households for weekly groceries and 27 for butcher's meats (there were in all, 38 neighbourhood centres in the area which served at least 100 households for at least one of the 13 items included in the questionnaire).

* Cf. Map of trade area of a neighbourhood centre food shop in a heavily built-up area (Thorpe, 1966).

The three durable goods available at a significant but small number of neighbourhood centres are hardware, chemist goods and shoes. The number of centres that served more than 100 households for these items was: 14 for hardware, 11 for chemist goods and 10 for shoes (only from co-operative stores).

The largest neighbourhood centres (usually with a large co-operative store) are able to retain at least 60-70% of food purchases made by households in the immediate area. When a chemist's shop operates in one of these centres a similar percentage of households in the immediate area is attracted.

The largest neighbourhood centres also retain a relatively high percentage of certain shopping goods, about 40 to 50% of hardware and 20 to 30% of shoes. Clothing and jewellery are very infrequently purchased at this level but the largest centres sometimes retain 10 to 20% of the sales made by households; these are all made at co-operative stores (see page 341).

The smaller neighbourhood centres attract so few customers that a description of their trade area would require different survey techniques to those used in this study.

Trade areas

The trade area of a centre has traditionally been defined in four ways:

(1) the area for which the centre is the most accessible point. A basic part of central place theory is that the ideal system of central places is one which leads to the minimum aggregate consumer travel. Although overlapping of trade areas is recognised it is sometimes in practice ignored. The delimitation of bus hinterlands is a good example of this method (see Green 1948).

(2) The area which includes a certain percentage of the centre's customers. The percentage used is purely arbitrary and may vary considerably. Green and Smith suggest 85% of a centre's customers while Fine favours 90% (quoted in Applebaum 1961, p.73). The trade area is further sub-divided into roughly concentric zones which are normally termed primary, secondary and fringe.

(3) The area for which the centre is the most important supplier of its specialist goods and services. This dominated area is often referred to as its 'umland' (see Godlund 1956).

(4) The area which is served by the centre for one or many functions and in any intensity - this is the most

realistic approach to the trade area of a centre since it takes into consideration the overlapping of spheres of influence of competing centres. This very wide trade area (as wide as the economic range of its specialist functions) can be referred to as its 'urban field'. (See Godlund 1956).

In the following analysis the trade areas of centres are delimited by means of the last three methods. The 'accessibility' hinterland was ignored since it could not adequately be applied at all levels of the hierarchy (e.g. bus hinterlands). There was nevertheless an observable relationship between the 'umlands' and 'bus hinterlands' of shopping goods centres.

The regional centres

For their specialist goods and functions the regional centres dominate the whole area. For instance, in more than seven out of every ten administrative units (ward or parish) more than half the purchases of jewellery were made in the regional centres (See Fig.C.11). For lower order goods the regional centres served less extensive trade areas; for instance in only one out of every ten administrative units did more than half of the households obtain their T.V. sets in the regional centres (see Fig.C.12).

The lower order trade area of the regional centres is limited to a radius of 8-9 miles. Within eight miles households in virtually all areas spend more than half of their total durable goods expenditure in the regional centres (see Fig.C.13). The actual percentage spent in the regional centres is, however, not only a function of distance but also of the scale of shopping provided locally and of the socio-economic status of the population (for the last factor see pages 299 to 308).

Major shopping centres

Applebaum defines the primary trade area as that component which includes 50-70% of all customers, the secondary, 30-20% and the fringe 20-10% (Applebaum 1961). Using the above definition it would appear that for major shopping centres in North Durham the primary zone is 0-2 miles; the secondary zone 2-4 miles and the fringe zone 4-8 miles; these three zones contained 70%, 20% and 10% respectively of the durable goods custom of major shopping centres (see Fig.C.25).

For the major shopping centres the umland was defined by two methods (a) the area which visited the centre more frequently than any other comparable or higher order centre (one of their specialist functions is weekly or week-end shopping,) and (b) the area from which it attracted more

durable goods expenditure than any other comparable centre (the regional centre expenditure was excluded since the goods purchased at that level are generally of a higher order).

For both umlands the boundary occurred towards the outer half of the secondary trade zone (after Applebaum), i.e. between 3 and 4 miles from the shopping centres. Within three miles each major shopping centre attracted more consumers for weekly shopping and more of their durable goods expenditure than other comparable and competing centres. (see Fig.C.15). In certain areas where circumstances were favourable e.g. absence of competing alternative centres, the major shopping centres were able to extend their trade areas to a distance of 4 miles and in very exceptional circumstances beyond this (see page 320).

Although it may be of practical value to delimit a centre's trade area into 'intensity' zones or umlands, the distribution of a centre's customers is in reality in the form of a continuum.

It is clear that the percentage of consumers attracted to the major shopping centres declines directly with distance and can be represented by a straight line but the number of consumers attracted to a centre declines exponentially with distance (see Fig.C.25). It would seem that the exponential

curve for the distribution of a centre's customers represents equilibrium in consumer orientation and accounts for the observed overlapping of trade areas.

The existence of an exponential distribution of a centre's customers and of overlapping of the trade areas of competing centres is necessary to the equilibrium of a central place system. In any established system of central places the increase or loss of population in any area sets off a chain reaction by means of which the system strives to re-achieve equilibrium. For a particular centre a substantial change of population at any distance within its widest trade area would set in motion a similar chain reaction which would result in (a) an increase or decrease in the provision of central place functions (2) an increase or decrease in the percentage of consumers it is able to attract from any distance, (3) a contraction or extension of its trade area, and (4) in equilibrium the re-achievement of an exponential distribution of its customers.

Assume, for instance, that there was a significant increase in the number of consumers attracted to a centre from a distance of three miles because of an increase in the area's population. An increase in the number of customers attracted would lead to the further provision of

shops supplying a larger range of similar order goods or of higher order goods if the increase of customers were sufficient to allow the addition of higher threshold functions. The increased status of the shopping centre would then prove more attractive to consumers at all distances and the economic range of the centre may also increase. In the same way a significant loss of customers through a decline in population or because of competition would result in a loss of central place functions and a commensurate loss of customers at all distances. In reality the trade area of a shopping centre is never in equilibrium; there is a constant interaction between the centre and its hinterland.

An extension of the above argument with a constant increase in population would result in a limit to the number of consumers that can be attracted from within a certain area e.g. the total number that live within a mile of the centre. This theoretical limit would not, however, be reached either because of competition which would cut off its 'excess profits' areas or because of a change in the character of the centre; it may take on regional centre status; in which case only the distribution of its lower order goods customers may assume exponential form.

The presence of a continuum in the distribution of a centre's customers must also be taken into account in attempting to predict the outlets for the retail expenditure generated by the population of any area. Market researchers have in the past ignored the importance of this - a notable exception is the retail market potential model put forward by Larkshmanan and Hansen. They attempted to devise a formula which 'describes a situation of overlapping competition between shopping centres and develops a mathematical framework for measuring it' (Larkshmanan and Hansen 1965 p.135)*.

Small shopping centres:

The trade areas of small shopping centres differ from those of major shopping centres in two ways: firstly, their centre is able to dominate them less intensively and secondly, they are less extensive in area.

The boundaries of the primary, secondary and fringe zones are roughly correspondent with radii of one, two and three miles respectively. The primary, secondary and fringe zones contain 60%, 30% and 10% respectively of the average centre's durable goods customers.

* See also W.G.McClelland's 'Costs and Competition in Retailing' (1966) pp.202-207.

The boundary of the umland of these centres lies between two and three miles from the centre. Except for a few specialist functions, like T.V. sets, the centres do not dominante their umland.

Because of the low attractive power of these centres it is difficult to define their urban field. Although they do extend this influence beyond three miles they do so only where there is a competition-free area (see page 326). The overlapping of trade areas is also evident but in the case of the small shopping centres this is overshadowed by the dominance of the regional centres throughout their trade areas. (see Table C.33 in the Appendix).

Suburban centres

The trade areas of suburban centres can best be described in terms of turnover i.e. the area which contains a certain percentage of the centre's total turnover or customers. For suburban centres at least 90% of both convenience and durable goods customers are contained within a radius of two miles.

There is little reality in the division of a suburban centre's trade area into primary, secondary and fringe zones.

The intensive trade area is roughly within walking distance, a mile or 20 minutes, and from this area the centres draw 70-80% of their total consumers for both convenience and durable goods. The centres do at times attract significant custom from areas up to three miles if there is little competition from higher order centres. There is also an indication of the potential influence of suburban centres in the exceptionally large trade areas of one centre for T.V. sets (see page 332).

Small suburban centres

The trade area of these centres is virtually limited to a mile radius. Some centres are able to extend their influence beyond this for the supply of their specialist goods e.g. chemist goods.

Only one of the fifteen small suburban centres draw more than 10% of its durable goods customers from beyond a one-mile radius. For convenience goods all centres drew less than 10% of their customers from beyond a mile radius.

Neighbourhood centres

The trade area of the largest neighbourhood centres approaches that of the small suburban centres and is restricted to a mile radius. The small neighbourhood centres may have trade areas that consist of not more than a few streets. The present study cannot adequately describe

trade areas at this level of the hierarchy.

Chapter 6

Differences in the shopping habits of households

In the above models consumers are assumed to be undifferentiated but in reality they are of very mixed character. Two important variables are here examined for their influence on shopping habits

(a) social class (type of house occupied) and

(b) car ownership.

The per capita retail expenditure of households in the lower socio-economic groups is lower than that for households in the higher socio-economic groups. This is the case both for convenience and durable goods but because of income elasticity of demand particularly for the latter (see Family Expenditure Survey 1962).

Empirical research has also shown that the shopping habits of households of different social class vary significantly. Two recent articles by Murdie (Econ. Geog. 1965) and Hess (Geografisk Tidskrift 1966) have demonstrated that consumers of differing social, economic and cultural backgrounds select different levels of the hierarchy to obtain their required goods and services.

Type of house*

(1) Grade 1 households shop most often in the regional centres for all shopping goods.

(2) The percentage shopping in the regional centres for each shopping good decreases progressively from Grade 1 households to those in the lowest grade houses, Council households (see Table C.26 in the Appendix).

(3) Grade 1 households spend the least in the convenience goods centres ('B' and lower) but there is no significant difference among the other three household groups (See table C.27 in the Appendix).

Car ownership

(1) Households with cars show a more concentrated shopping in the regional centres and a correspondingly lower expenditure in convenience goods centres than non-car households (See Tables C.29 and C.30 in Appendix).

(2) Within each household group much the same differences are apparent e.g. car owning grade 1 households shop more often in the regional centres and less often in convenience goods centres than non-car grade 1 households.

Durable goods expenditure

Fig.C.26 and Table C.25 in the Appendix show the

* See page 203 for the division of households by the type of house occupied.

percentage of all durable goods expenditure made in the regional centres for each of the four household groups.

Grade 1 households at all distances spend a higher than average proportion in the regional centres while at the other extreme Council households spend consistently less than the average. The other two household groups are less consistent but on an overall basis Grade 2 households spend slightly more than the average in the regional centres while Grade 3 households spend slightly less; the heterogeneous composition and intermediate grade of these two household groups account for their oscillation about the average. (See Fig.C.26)

Fig.C.27 shows the consumer curves for Grade 1 and Council households for each shopping good. Grade 1 households purchase about 20% more of their durable goods in the regional centres than do council households (65% as against 43%). There is, however, a Grade 1 sample bias towards the regional centre i.e. a greater proportion of Grade 1 households lived nearer to the regional centres than Council households; this is probably because of the recent suburbanization of the area by Tynesiders. It would seem, therefore, that given an even distribution

of the two types the percentage expenditure in the regional centres by Grade 1 households should exceed that of Council households by just under 20%.

Table C.26 in the Appendix shows the percentage spent in Newcastle and Sunderland by Grade 1 and Council households for each durable goods item. Excluding chemist goods, the differences between the two groups range from 32% for furniture to 17% for T.V. sets. The smaller differences appear to be in those goods of which a generally low or high proportion is purchased in the regional centres; the one exception to this is hardware (29%), which is second only to furniture.

Table C.28 in the Appendix shows the results of statistical tests for the significance of differences between the percentages spent in the regional centres by the two household groups for each shopping good at each mile-distance. The table shows those differences which were significant at the .05 level of probability. Furniture, hardware and shoes are purchased by significantly different percentages at virtually every distance. Kitchen appliances and women's clothing are the other two items which are purchased by significantly different percentages in the two household groups at most distances.

Table C.27 in the Appendix shows that convenience goods centres accounted for 16% of the durable goods expenditure of council households but only 7% of the expenditure of the Grade 1 households. Only chemist goods, hardware and T.V. sets are purchased at this level in significant quantities by Grade 1 households. But even for these lower order goods the percentage of Grade 1 households shopping at convenience goods centres is low relative to council households e.g. 10% against 29% for hardware.

The differences between the shopping habits of the two household groups must stem partly from the greater range and quality of shopping goods required by Grade 1 households and from their greater mobility. Grade 1 households require a higher order centre for the satisfaction of their shopping needs and are, therefore, prepared to travel longer distances. The shopping requirements of council households, on the other hand, are of a less specialized nature and are often adequately available at lower order centres.

Though the questionnaire was not designed to distinguish between the quality and price of purchases made by different households, it is nevertheless patent that the local orientation of shopping among council households is indicative

of the lower quality and range of goods purchased. This is to some extent illustrated by the proportions of households in the two groups which showed purchases of jewellery - 87% of Grade 1 households but only 72% of council households; T.V. sets on the other hand, were indicated by 90% of both household groups.

In his study of Chicago, Berry noted that in higher income neighbourhoods all four levels of business centres (below the Metropolitan CBD) were present while in the lower income neighbourhoods only the two lowest levels were found. In the higher income neighbourhoods he attributed this to the wider variety of shopping trips generated by the higher income households and the greater distances travelled by families with more funds available to them. In the lower income neighbourhoods the greater local orientation of the shopping plus the fact that the lower incomes were insufficient to support more specialized shopping led to the absence of higher order centres. (Berry 1963 p.4).

In this area the same pattern is apparent. Higher income groups use the convenience goods centres less intensively than the lower income groups and travel more frequently to the shopping goods and regional centres.

The car ownership rate of the region is far below that of the country as a whole. In 1964 the number of persons per car in County Durham was 9.8 which compared unfavourably with 6.4 for the whole of Britain. There is in addition no tendency for car ownership to increase more rapidly than in the rest of the country; the 1961-64 percent increase in the county was the same as in the country as a whole. Data collected in the survey showed that there was one car to every 2.7 households (this would exclude the second car of a two-car household). The Administrative County figures are given in persons per car but the 1965 figure suggests that there was one car to approximately 2.8 households.

Households owning cars showed the same shopping characteristics relative to non-car households as Grade I households to those of lower grade. In fact car ownership is directly related to type of housing and Grade I households showed the highest ownership rate. Of the car-owning households 31% were Grade 1 households (Grade 1 households formed only 16% of all households in the sample).

Table C.29 in the Appendix and Fig.C.26 indicate the greater attraction of car owning households to the regional centres. On an average car owning households buy just

over 10% more of their durable goods in the regional centres than do non-car households. The difference, of course, is much smaller when car ownership is considered within a house group; here it is 5 to 10% more.

An interesting and important point arises from car-ownership. Car owning households are not only more attracted to the regional centres than the non-car households of their own household group but also of the non-car households of the next higher grade of houses, though less than the car-owning households of this higher group. This dove-tailing of car and non-car households is shown in Fig.C.28.

The great attraction of Grade 1 households to the regional centre is such that even its non-car households spend more in the regional centres than do the car households of the next lower grade of houses. There is again a bias in the sample - 60% of the non-car Grade 1 households are within 8 miles of a regional centre compared to only 45% of the car-owning Grade 2 households. Without the sample bias the figures for Grade 1 households (cars & non cars) would be appreciably lower and would conform to the dove-tailing.

Possession of a car is an important factor determining the likely centres for the satisfaction of shopping needs

but the social class of the household is itself the most important factor to be considered. The possession of a car, does however, add a further dimension to the shopper's sphere; the car has the effect of reducing the subjective economic distance and thus serves to lengthen the 'range of central place goods'. In practice this is to the benefit of the larger centres and is especially so in densely populated areas where the range of a good is determined mostly through competition with other centres.

In the sruvey area households owning cars visited the regional centre 20 to 25% more frequently than non-car households (the car was used on two-thirds of the trips to the regional centres by car-owning households). It is worth remembering, however, that bus travel is still the most important means of transport to the shopping centres. Firstly, there is the large number of households without cars (63%) and secondly, bus travel is very often used by car-owning households to the weekly shopping goods centres; the difficulty of estimating the proportion of households that use their cars on these trips arises from the large number that walk to such centres.

In a survey of pedestrians in the centre of Newcastle*

* Report on the Pedestrian survey, 1962, City Planning Department, Newcastle.

only 15.5% of journeys into the central area were by car, 70.4% came by bus and 5.9% by train, but persons in social classes I and II used cars more frequently than buses while in the lower social classes car travel was negligible. A smaller percentage of people used cars for shopping purposes than for getting to work.

Chapter 7

The Shopping centres of the Region

The consumer orientation and trade areas of centres at each level of the hierarchy have been described.* The emphasis has so far been on the differences between the several levels of the hierarchy. In this chapter the internal variations at each level of the hierarchy are examined i.e. it describes the particular characteristics of selected centres and attempts to account for some of the significant variations from the average for all centres of similar rank.

Regional Centres

Newcastle (pop.270,000 in 1961) is much larger in size than Sunderland (pop.190,000 in 1961), it is also the centre of a more densely populated area, the Tyneside conurbation. It is more advantageously situated than Sunderland for the provision of central place services to outlying areas - Sunderland's hinterland and trading power are adversely influenced by the physical restrictions of its coastal location. This is evident from an analysis of the retail sales of the two centres in 1961.

Fig.C.24 shows the relatively small section of the survey area over which Sunderland exerts a stronger influence than Newcastle. This area is restricted to the Urban Districts of

* Fig.C.24 shows the trade area of all centres above the neighbourhood level.

Table C.11

Turnover in 1961

	All establishments		Central shopping area	
	Newcastle £'000	Sunderland £'000	Newcastle £'000	Sunderland £'000
Convenience	28,315	14,458	4,288	2,029
Durables	50,585	19,628	35,162	15,100
TOTAL	78,900	34,086	39,450	17,129

Source: Census of Distribution, 1961, pt.3

Hetton and Houghton le Spring, together with four neighbouring parishes. The river Wear largely determines the western boundary of Sunderland's catchment area - the river in fact, protects and restricts the town's catchment area in its competition with Newcastle. On the one hand, it provides Sunderland with a relatively protected wedge extending to Durham, while on the other, only three administrative units, west of the Wear, show significant purchases in the town; these are Usworth Colliery ward, Washington Station ward and Harraton parish. The last two are both within a mile of Fatfield bridge (the only bridge on the Wear between Chester le Street and Sunderland), the former is connected to Sunderland by a road to the north of the river and is in fact equidistant from both regional centres.

About one-quarter of the area's population is dominated by Sunderland and the centre attracts about one-quarter of all regional centre purchases within the area. Newcastle is especially strong for the fashionable and high quality goods - clothing and jewellery. Relative to Sunderland, Newcastle's share of purchases in women's clothing and jewellery is very high; to a lesser extent also for men's and children's clothing. Sunderland shows up as a surprisingly strong centre for furniture. See Table C.12.

TABLE C.12

No. of households purchasing each item

	Newcastle	%	Sunderland	%	TOTAL
Women's Clothing	51,230	81	12,180	19	63,410
Jewellery	48,720	79	13,120	21	61,840
Children's Cl.	42,760	78	12,160	22	54,920
Men's Clothing	40,930	77	12,400	23	53,330
Furniture	37,060	72	14,850	28	51,910
Shoes	30,170	74	10,350	26	40,520
Cycles/Prams	26,910	72	10,510	28	37,420
Kitchen App.	24,770	81	5,980	19	30,750
Hardware	17,840	76	5,670	24	23,510
T.V.sets	14,600	69	6,670	31	21,270
Chemist goods	2,740	80	680	20	3,420
Average for ALL Durables	33,190	77	10,140	23	43,330

From within the area Newcastle attracts 3.3 times as many durable goods consumers as Sunderland. This is, however, partly because the major part of the survey area is within the logical catchment area of Newcastle. Central area sales (Table C.11) suggest that Newcastle's attractive power is approximately 2½ times that of Sunderland. A measure of Newcastle's powerful attraction is the strength of its influence even within the area dominated by Sunderland. Of the 72 administrative units in the area only 5 purchased less than 10% of their durable goods in Newcastle; Sunderland was able to attract more than 10% of durable goods purchases from only 16 administrative units.

The greater attractive power of Newcastle can also be seen from the relative proportions of durable goods expenditure attracted to each of the regional centres in three of the Washington U.D. wards (Table C.13). The three wards run east-west and are linked to both Newcastle and Sunderland by bus. Approximate distances by road are shown. Bus times are indicated in brackets.

Orientation to either of the regional centres is not always a matter of accessibility - whether it be road distance, time-distance, bus frequency etc. Preference for either of the centres is often psychological - or rather the end product of intangible

Table C.13

% of Durable goods expenditure

Ward	Distance miles		Expenditure %	
	Newcastle	S'land	Newcastle	Sunderland
Usworth Coll.	6 (25 min)	6 (25 min)	44.0	17.3
Gt.Usworth	6 (25 ")	7 (30 ")	47.7	5.0
Springwell	5 (20 ")	8 (35 ")	54.7	2.0

environmental influences. This is evident in the progressively stronger orientation to Newcastle, moving westwards from Fencehouses ward to Little Lumley parish and Gt.Lumley parish - the three settlements are each about 11 miles by road from Newcastle; distances from Sunderland are Fencehouses 7 miles; Little Lumley 8 miles and Gt. Lumley 9 miles.

Table C.14

% of durable goods expenditure

	N'castle %	S'land %	Chester le Str. %	Houghton le % Spring
Fencehouses Wd.	16.9	39.2	9.8	14.2
Lt.Lumley Ph.*	11.4	16.4	37.7	3.3
Gt.Lumley Ph.	31.8	9.3	50.0	0.6

The dividing line between the trade areas of the two regional centres in this area is reckoned to be the Fencehouses railway line -

* the small percentages spent in the regional centres are a result of the high percentage of Grade 3 households in the sample - 90%

to the east is Sunderland territory and the 'Sunderland Echo' is the popular evening paper while to the west Newcastle is dominant and the 'Newcastle Chronicle' is the popular evening paper (opinion of local businessmen in Houghton le Spring and Chester le Street). The strong orientation of Lt.Lumley and Gt.Lumley to Newcastle is also tied up with their strong association with Chester le Street as opposed to Houghton le Spring. It would seem that if Houghton le Spring were able to attract more households from these two parishes there would be a corresponding increase in their attraction to Sunderland i.e. a hierarchical nesting of trade areas may well operate significantly between the two regional centres and their associated shopping goods centres.

Major shopping centres

The effects of local characteristics are evident from the consumer orientation and trade areas of Consett and Stanley; these contrast strongly with the more theoretically ideal conditions in Chester le Street.

The irregularity of the Consett and Stanley trade areas can be accounted for by:

(a) the truncated hinterland of Consett - the survey area did not extend beyond the urban district's boundary in the west (about two miles from the town centre) but the inclusion of this area would not have affected the results since because of relief the area is very sparsely populated.

(b) the sporadic settlement pattern of the Consett and Stanley area - the typical settlement pattern ofWest Durham.

(c) the growth pattern of the two settlements has led to the presence of small suburban and suburban centres within a short distance of the two towns - indeed the growth of the two towns was through the coalescence of several nuclei, each with its own shopping centre; most of these have retained and added to their vitality.

(d) the absence of full competition from other shopping goods centres; this is especially so for Consett.

Chester le Street, on the other hand, is more typical of small/medium English towns than any other in North Durham. Its growth has been uni-nuclear with its High Street being the focus of central place functions throughout its history. No shopping facilities above the lowest convenience level have developed outside the central area. Also the distribution of settlement around the town centre is fairly balanced.

Chester le Street is also surrounded by five shopping goods centres at distances of 5 to 7 miles. Its catchment area population is almost equally distributed 'towards' and 'away' from the regional centres of Newcastle and Sunderland. Thus with a large sample of households at all distances to ensure reliability, competition from comparable centres within a six mile radius, lower order centres adequately serving the

interstices and the town's equidistance from the two regional centres it can be assumed that the Chester le Street area is an approximation of the theoretical disposition of central places in a highly urbanized area.

Convenience goods

The most marked differences in the attraction of consumers to the centres for food occur within a radius of three miles (see Table C.7)

Of the three centres Stanley attracts the lowest proportion of households from the area. Within two miles of this centre there are several strong 'convenience goods' centres; these include Annfield Plain (suburban), South Moor (small suburban) and Dipton and Craghead (large neighbourhood centres).

Consett attracts a lower proportion of custom from within two miles but enjoys an 'excess profits' situation beyond this. Within 1 and 1½ miles respectively of its shopping centre are Blackhill and Leadgate, two small suburban centres. As a result the shopping centre captures a particularly low percentage of custom from those within a mile but at the next mile zone the unfavourable competition of Leadgate is balanced by an exceptionally high attraction of consumers from Moorside (Consett south ward), a large settlement of Council estates with virtually no central place functions and lying beyond the Consett Iron works. From the Leadgate ward Consett attracts

45% of food purchases compared to 87% from the South ward.

To the north of Consett there is an 'excess profits' area; this is particularly so at distances of three and four miles. The nearest centre above the neighbourhood level is at Chopwell (small suburban), at least 6 miles away. Consett therefore attracts a very high percentage of consumers from Ebchester and Medomsley villages, 3 miles away. From Ebchester ward Consett attracts 52% of food expenditure.

Chester le Street, on the other hand, has very little competition within two or three miles of its centre. The nearest centres above the neighbourhood level are at Pelton (small suburban - weak), two miles away and Birtley (suburban) about three miles away. As a result within a radius of two miles Chester le Street captures a higher than average percentage of custom.

Durable goods

Consumer orientation for chemist goods is virtually the same for food and all centres show the same relative differences. The attraction of consumers to Consett for chemist goods is rather interesting since it highlights the 'accessibility' factor involved in consumer orientation for this type of good. For the first three mile-zones Consett attracts 83%, 58% and 74% respectively of consumers for these goods. Between one and

two miles the centre attracted 16% of consumers from Leadgate ward (centre contains a chemist shop) as against 100% from the South ward (Moorside). Consett is the nearest centre for Moorside but of even more importance is the fact that in order to visit any other centre it would be necessary to go via Consett - for this type of good this would virtually eliminate all competition. Between two and three miles the high percentage of custom attracted is because of the absence of a chemist shop at centres to the north of the town e.g. Ebchester.

For the average of all durable goods there were less differences among the centres (see Table C.7). This is because of the smaller part played by lower order centres for the supply of these goods. Some of the observed differences were mainly due to sampling variations; this is particularly the case for Consett which because of its truncated hinterland and the low population density to the south-west is often unable to balance its favourable and unfavourable areas e.g. at 4-5 miles the low percentage of custom drawn from Annfield Plain ward (suburban centre) is not balanced by any favourable area since there is no other settlement at this distance from the centre.

Stanley attracts a lower percentage of custom from all areas within three miles of the centre. This is because of

the presence of strong lower order centres but note that consumer orientation at these distances is not far below the average for all major shopping centres since the competing centres can offer only limited competition (contrast with the percentages attracted for food).

The village of Lanchester (pop.4,000) is an interesting example of the 'gravitational' pull of competing shopping centres. It is situated in the sparsely populated farming country in the south-west of the area. It is served by a small suburban centre and lies approximately three miles to Annfield Plain, four miles to Stanley, five miles to Consett and eight miles to Durham, it is 14-15 miles from Newcastle. It is linked by a half-hourly bus service to Durham and Consett and less frequently to Annfield Plain and Stanley.

Local and mobile shops account for 80% of food purchases but only 11% of durable goods (mostly chemist goods). Table C.15 gives the percentage of durable goods expenditure attracted to the various centres. The percentage of durable goods bought in the regional centres is consistent with its distance from Newcastle and the social class of the population (the percentage of Grade 1 households is more than twice the area average).

The percentages of durable goods expenditure attracted to the three shopping goods centres are very interesting. The nearest centre is Stanley but Consett with a better bus service and a larger shopping centre attracts the highest percentage of custom. Durham with the largest shopping centre but a greater distance away attracts less custom than Consett but more than Stanley. The small percentage shopping at Annfield Plain is partly because it is the nearest higher order centre and also because of the location there of the parent store of the local co-operative store.

Table C.15

Lanchester Village - Durable goods expenditure

	%
Regional centres	44.0
Consett	19.0
Durham	12.4
Stanley	9.4
Annfield Plain	2.0
Lanchester	10.9
Others	2.3
	100.0

The attraction of consumers to Chester le Street does not vary significantly from the average for all major shopping centres.

Populations served

Of the three major shopping centres, Consett and Chester le Street are superior to Stanley in the scale of shops provided. Chester le Street, however, has a larger umland population than Consett which is handicapped by the sparsely populated area to the south. Table C.16 shows that the population which uses Chester le Street as its weekly shopping centre (umland population) is 10% higher than that which looks to Consett which is in its turn slightly larger than Stanley's. Further the modality of Chester le Street is such that it can attract 'fringe' households from a wider area and population than either of the other two centres. As a result of the above favourable factors the number of households shopping in Chester le Street is about 20% higher than that of the other two centres for food and about 15% for durable goods.

There are also certain durable goods items for which some centres serve exceptionally large or small populations. Table C.16 shows the population served by each centre for all 13 types of good. There is, of course, a noticeable degree of variation

Table C.16

Major Shopping Centres

No. of households

Goods	Chester le Street	Consett	Stanley	Average
Groceries	10,620	9,430	8,720	9,590
Meats	9,870	6,670	8,240	8,260
Chemist	10,310	8,980	8,690	9,330
Kitchen Appliances	12,020	9,440	11,280	10,910
T.V.sets	10,350	11,010	11,180	10,810
Cycles/Prams	9,380	11,620	9,070	10,020
Hardware	10,640	9,090	9,880	9,870
Shoes	8,690	9,260	7,800	8,580
Furniture	9,160	7,080	8,080	8,110
Men's Clothing	9,380	6,420	6,240	7,350
Children's Clothing	6,520	7,600	5,680	6,600
Jewellery	7,460	4,940	3,710	5,370
Women's Clothing	4,940	5,080	4,560	4,860
Food	10,410	8,660	8,580	9,220
Durables	8,570	7,630	7,490	7,900
Umland population	16,800	15,000	14,800	15,500

in the individual items. This is to be expected

(a) for statistical reasons i.e. both the sampling error and the random variability from the norm that is always present in reality

(b) differences in the numbers and types of shops provided at the three centres. The second is of particular interest.

Chester le Street serves an above average number of households for most durable goods; there are, however, three goods for which it serves populations that are significantly higher than the average (at least 10% higher). These are furniture, men's clothing and jewellery. The number of households served with jewellery is especially high relative to the other two centres - 50% above Consett's and 100% above Stanley's. Though jewellery is essentially a regional centre good there are in Chester le Street three small jewellery shops; there is one small shop in Consett and none in Stanley. Chester le Street also appears to be better provided with furniture and men's clothing shops but these are adequately available in the other two centres.

Consett serves a particularly high number of households with children's clothing and cycles/prams. There are in fact two specialist pram shops in Consett, one in Chester le Street and none in Stanley. It is less easy to identify differences between this centre and the other two for the provision

of children's clothing but there was clearly a significantly stronger attraction to Consett for this item.

Stanley has fewer specialist shops than the other two centres. For men's clothing, jewellery, children's clothing and cycles/prams the centre serves exceptionally low populations. It exceeds the average for the three centres only for the lowest order goods T.V. sets and kitchen appliances but not to an exceptional degree.

The durable goods sales made at each of the major shopping centres is equivalent to just over 50% of the total sales generated by their umlands i.e. the total spent at each centre by all households is expressed as a percentage of the sales generated by households within the umland. On an average the percentage of a centre's trade originating from beyond the umland is 10 to 15% but since the delimitation of an umland ignores overlapping it would be more realistic to express the total expenditure of the centre as a percentage of the sales generated by its umland - it can be assumed that the custom lost to other competing centres within the umland will be balanced by the sales attracted from the umlands of the competing centres.

Small shopping centres

Differences between the percentages attracted to the two shopping centres of Houghton le Spring and New Washington are

the result of differences in the settlement pattern and relief of the two hinterland areas as well as competition from other centres.

There is less fragmentation in the settlement pattern of New Washington's hinterland than is the case in Houghton le Spring's. Houghton le Spring and its hinterland lie along the western edge of the limestone escarpment but the irregular scarp-line has restricted the growth of certain settlements and is responsible for the relatively low accessibility between the shopping centre and the neighbouring settlements. In Washington the shopping centre is within walking distance of a population of just under 15,000 while in Houghton le Spring about 10,000 people are within a 'less comfortable' walking distance of the town centre.

The fragmentary nature of the settlement pattern of Houghton le Spring U.D. has given rise to competing centres just beyond one mile of the town centre. Within the Urban District there are small suburban centres at Shiney Row (3 miles) and Fencehouses/Colliery Row (two miles); a large neighbourhood centre at New Herrington (2½ miles) and small but important centres at Newbottle (1½ miles) and Barnwell (3½ miles). South of the Urban District there is a suburban centre at Hetton le Hole, within two miles.

In Washington U.D. the only important centres outside the town centre are a declining small suburban centre at Washington Station (2 miles) and a neighbourhood centre at Springwell (2 miles).

The above factors account for the higher percentage of custom attracted to New Washington from within two miles of the centre (see Table C.8). In contrast Houghton le Spring captures a higher percentage of custom from households between 2 and 3 miles of the centre; the shopping centre benefits from the absence of a shopping goods centre towards the south-east and draws a significantly high custom from this area.

As Table C.17 shows Houghton le Spring has a larger umland population than New Washington. Differences in the size of their umland populations emphasize the basic difference between the two towns viz. that whereas Houghton le Spring has been the traditional shopping centre for a fairly wide area, New Washington has only recently grown in status and as yet has only a limited trade area.

A comparison of the populations actually served for food and durable goods shows that Houghton le Spring served just over 10% more households for food than New Washington but just over 40% more for durable goods. Houghton-le-Spring's wider catchment area is reflected in the large populations

TABLE C.17

Number of households served

Small shopping centres

	New Washington	Houghton le Spring	Average
Groceries	4,110	4,740	4,420
Meats	4,000	4,250	4,130
Chemist goods	4,740	5,690	5,210
Kitchen Appliances	3,590	6,170	4,880
T.V.sets	4,240	6,390	5,310
Cycles/Prams	2,360	4,570	3,460
Hardware	3,780	4,820	4,300
Shoes	1,600	3,150	1,870
Furniture	1,870	990	1,430
Men's Clothing	460	2,140	1,300
Children's Clothing	780	1,970	1,380
Jewellery	600	930	770
Women's Clothing	440	1,000	720
Average - Food	4,080	4,600	4,340
Average - Durables	1,990	2,810	2,400
Umland population	6,000	12,300	9,150

N.B. Compare table C.16 + table C.19

served for the four lower order shopping goods : T.V. sets, kitchen appliances, hardware and cycles/prams. The goods are adequately provided at both centres but Houghton le Spring's ascendancy is most strongly evident from its ability to draw consumers from 2 to 3 miles away for the supply of these goods - between 10 and 20% of consumers at this distance compared to less than 5% by New Washington.

The general absence of specialist shops in both centres is evident from the low number of consumers attracted to the centres for shoes (too few shops), furniture, clothing and jewellery. As a result, the presence of a specialist shop has a marked effect on the number of consumers attracted to the centres. This can be seen from Table C.17 in which the two items which show the greatest relative differences between the two shopping centres are men's clothing and furniture.

Houghton le Spring has the greatest relative superiority over New Washington in men's clothing; this is almost certainly because of the presence of a Burton's in the former and the absence of a comparable shop in the latter. Furniture is the only item for which New Washington has an absolute majority of customers over Houghton le Spring (almost twice as many); this is because of the presence of two multiple furniture shops in the centre and the absence of a comparable shop in Houghton le Spring (the only furniture shop in the

latter's town centre is not very modern and is situated mid-way along Sunderland street, relatively far from the main shopping area).

The use made of these centres is well illustrated by the consumer orientation of the village of West Rainton (Table C.18). The village lies between Houghton le Spring and Durham, 3 miles and 4 miles away respectively; it is also 9 miles from Sunderland. Houghton le Spring is visited for week-end shopping purposes slightly more frequently than Durham; this is also indicated by the use made of the two centres for the purchase of chemist goods - Houghton le Spring attracts 59% while Durham's share is 33%. For food Houghton le Spring is again more frequently visited than Durham although the local centre retains the large majority of this expenditure. For shopping goods (excludes chemist goods), however, Houghton le Spring is of relatively little importance compared to Durham - 4% against 34% of the total shopping goods expenditure.

Houghton le Spring and New Washington exist in a situation where the regional centres attract a very high proportion of the hinterland population for shopping goods. As a result of this the populations actually served by the centres are too small for the support of specialist shops supplying higher order shopping goods. The presence of these shops

Table C.18

% age of total expenditure in West Rainton

	Food %	Chemist Goods %	Shopping Goods %
Regional centres	2.7	3.7	49.9
Durham	-	33.4	34.3
Houghton le Spring	5.7	59.2	3.8
W.Rainton	86.9	-	4.8
Other centres	4.7	3.7	7.2
	100.0	100.0	100.0

would undoubtedly result in an increased attraction of households to the centres e.g. Burton's in Houghton le Spring, but it is doubtful whether overall they would achieve the turnover requirements of multiple organisations. In this situation the umland population required for the support of a major shopping centre may be about 20,000 households or alternatively high density residential development within the area immediately surrounding the shopping centres.

Suburban centres

Table C.19 shows that Blaydon and Hetton le Hole serve large umland populations, Birtley and Annfield Plain smaller umlands, and Crawcrook a rather small umland population. The size of the umlands of the suburban centres is mostly a function of the size of the settlement.

TABLE C.19

Number of households served.

Suburban Centres ('B')

	Blaydon	Hetton le Hole	Birtley	Annfield Plain	Crawcrook	'Average'
Groceries	3,470	3,530	2,660	1,730	1,130	2,500
Meats	2,700	3,700	3,220	1,830	880	2,500
Chemist goods	3,320	3,500	3,090	2,560	1,290	2,760
Kitchen App.	780	1,930	600	970	650	990
T.V. sets	2,000	1,080	1,630	1,000	2,740	1,690
Cycles/Prams	1,290	710	1,030	340	310	740
Hardware	2,090	1,860	1,490	1,730	1,710	1,770
Shoes	1,640	1,850	810	780	350	1,090
Furniture	1,400	510	300	770	230	640
Men's Clothing	530	600	190	390	310	380
Children's Cl.	600	1,230	230	230	170	490
Jewellery	380	440	160	730	260	400
Women's Clothing	630	760	310	410	200	460
Average - Food	3,260	3,570	2,810	1,760	1,060	2,490
Average - Durables	1,350	1,240	800	880	690	990
Umland Population	5,700	5,100	3,700	3,200	1,700	3,900

see note below Table C.17

Three centres, Blaydon, Hetton le Hole and Birtley serve over 3,000 households for food and chemist goods. Annfield Plain suffers from its proximity to Stanley while Crawcrook is limited by the size of its settlement.

Shopping goods can be divided into three groups

(a) lower order goods i.e. available at the small suburban level viz. hardware and T.V. sets

(b) the intermediate group, available at some of the centres at this level viz. shoes and kitchen appliances

(c) higher order goods i.e. those not commonly available at this level.

All centres attract between 1000 and 2000 households for the lower order goods. For the intermediate group only some centres attract as much as 1000 households while for the higher order goods very few centres attract as many households.

Crawcrook is the least important centre for all shopping goods with the notable exception of T.V. sets; for this item the centre serves more households than any other centre does for this or any other shopping goods item. With the exception of Blaydon and Winlaton wards, Crawcrook attracted a significant percentage of consumers from throughout the Blaydon and Ryton Urban Districts - e.g. 54% of those in High Spen (3 miles away), 22% of those in Chopwell (5 miles away) and 11% of those in Rowlands Gill (4-5 miles away).

About one-quarter of Crawcrook's customers for T.V. sets lived at least four miles from the centre; only 44% lived within a mile of the centre.

Blaydon serves a higher than average population for virtually all shopping goods but especially for furniture, shoes and cycles/prams. This is because of the unusual presence of a multiple furniture shop (Caller's), a good shoe shop and a cycle shop.

In Hetton le Hole the presence of two shoe shops is reflected in the number of consumers served with this item. The high number of households served with kitchen appliances is also a result of the presence of a gas showroom. The large population served with children's clothing is either a sample variation due to the small number of actual purchasing households or else may be due to the importance of the co-operative store.

Besides hardware and T.V. sets, Birtley serves its highest population with cycles/prams - there are two cycle shops in the centre. Note the very low number of households that purchased furniture, clothing and jewellery. Besides the absence of specialist shops the low percentage is a result of proximity to Newcastle - shoes, for instance, are only available in the co-operative store.

Annfield Plain is a relatively small centre for shopping goods. It is supported by a significant number of households for four of the shopping goods viz. kitchen appliances, furniture, shoes and jewellery. Furniture is obtained at the large co-operative store while the others are purchased at small specialist stores; kitchen appliances from the gas showroom and jewellery from a small jeweller's or watch repairer's - the presence of the latter shop is clearly reflected in the number of households purchasing this item relative to the other centres.

Small suburban centres

Table C.20 shows the populations served by a selected number of small suburban centres for each of the different types of goods and compares these with the average for all centres at this level. All seven selected centres are among the largest suppliers of convenience goods i.e. they all supply an average of over 1,000 households with food. The centres are, however, selected and arranged according to the importance of their durable goods sales. The seven centres include the three very strong centres, Langley Park, Sacriston and Shiney Row (V.S.); one strong centre, Easington Lane (S); one average centre, Ryton (A.V.); one weak centre, Winlaton (W) and one very weak centre, Blackhill (V.W.). For the location and shopping provision of the selected centres see pages 228 to 233 .

TABLE C.20

Number of households

Small suburban centres ('C')

	(V.W.)	(W)	(A.V.)	(S)	(V.S.)	(V.S.)	(V.S.)	
	Blackhill	Winlaton	Ryton	Easington Lane	Shiney Row	Sacriston	Langley Park	Average of '15' centres
Groceries	910	1,780	1,280	1,370	1,900	1,660	1,280	1,200
Meats	1,580	1,970	1,760	1,490	1,520	1,890	1,710	1,360
Chemist goods	1,700	1,920	1,770	1,410	2,210	2,110	1,680	1,560
Kitchen App.	-	70	130	310	740	370	620	260
T.V.sets	120	160	750	1,000	1,000	730	850	460
Cycles/Prams	-	170	160	320	670	610	500	250
Hardware	80	350	460	860	1,330	900	1,340	600
Shoes	60	170	100	400	270	490	700	320
Furniture	-	-	60	150	80	250	400	130
Men's Clothing	160	-	100	70	200	460	500	160
Children's Cl.	-	90	240	150	270	450	350	150
Jewellery	-	-	80	-	-	160	80	90
Women's Cl.	-	-	150	120	190	480	430	160
Average - Food	1,090	1,830	1,410	1,420	1,810	1,730	1,390	1,250
Average - Durables	180	240	330	430	560	630	670	350
Umland Population	2,500	2,300	1,800	1,600	2,500	2,000	1,700	1,800

Shiney Row, Sacriston and Langley Park are respectively three, four and five miles from the nearest higher order centre. Of the three Langley Park dominates its area most strongly for durable goods - this is firstly, because it is the most remote from higher order competition and secondly, because the population in the immediate area is of low social class (95% of households lived in the two lowest grades of houses). Langley Park retains 36% of its parish's expenditure on durable goods. The large co-operative store is mainly responsible for the size of the population served for the different shopping goods.

Sacriston is the second largest centre for durable goods. The centre retains 29% of the durable goods expenditure of its own parish and is also able to draw custom from an area extending up to two miles from the centre for a wide range of goods and services. The four neighbouring parishes of Witton Gilbert, Plawsworth, Edmondsley and Kimblesworth have poorly equipped neighbourhood centres and look to Sacriston for the full range of lower order goods. The import of custom into Sacriston from these parishes is highest for chemist goods (two chemist shops and also a part time shop). Meats, groceries and T.V. sets are also bought in substantial quantities by households in the four parishes. See Fig.C/20+/21 for food and durables.

Shiney Row is a rather interesting centre. The rapid growth of shops in the last few years has followed a rapid increase of population in the area during the previous decade - there was an increase in the immediate area of over 12% or 1,200 people during the 1951-61 decade; the population of its hinterland in 1961 was about 10,000 (this includes part of Burnmoor parish which adjoins the Shiney Row settlement). The shopping centre has been developed by the addition of two small parades of shops; the attractiveness of the centre was reflected in the quick occupation of the shop units (contrast with Birtley).

As Table C.20 shows the centre does not serve a large population for the higher order shopping goods. This is because of the proximity of Sunderland (4 miles away). The local co-operative store, for instance, has its early closing day on Saturday because of the number of shoppers that visit Sunderland on this day. For the lower order shopping goods, hardware and T.V. sets, Shiney Row serves a very high number of households; of the higher order shopping goods, kitchen appliances and cycles/prams, are the only purchases which are significantly above the average for centres at this level - there is a large shop supplying gas and electrical appliances and also a cycle shop.

Easington Lane is an established centre serving a predominantly mining settlement but one in which the population has increased recently. The large number of households served for T.V. sets is because of the presence of three specialist shops in the centre.

Ryton is a moderately strong centre which has been extended recently, again because it is in an area of rising population. In spite of the erection of a block of shops towards the end of 1960, the centre has not risen much in status and so only the lower order goods are as yet of much importance i.e. food, chemist goods, hardware and T.V. sets.

Winlaton is a built-up extension of Blaydon and lies to the south of that centre. Its proximity to Blaydon and the strong influence of Newcastle are mainly responsible for the poor provision of durable goods shops. Consequently even for the lowest order goods (excluding chemist goods) the centre is supported by only a small number of households.

Blackhill is a typical example of the small suburban centre which attracts a high number of households for convenience goods and chemist goods but is unable to retain a fair share of shopping goods purchases. It is situated about a mile from Consett's shopping centre and though it caters for the convenience goods needs of 15-1700 households its shopping goods sales are negligible. The weakness of the

centre is also reflected in the low number of households that obtain their groceries in the centre. The attraction of Consett was much stronger for this item than for mats or chemist goods. This is probably a result of the present competitive element between supermarket and non-supermarket centres.

Neighbourhood centres

There are three neighbourhood centres which serve exceptionally large populations especially for durable goods; these are Dipton, Craghead and Burnopfield (see Fig.C.5). Besides food shops there is little else but a chemist shop and a large co-operative store. However, Table C.21 shows that except for chemist goods, the average number of households served by the three neighbourhood centres is not far below the average served by the small suburban centres for durable goods.

The distorting effect of co-operative stores is well illustrated in these centres. But for the presence of the large co-operative store the populations served by each centre would not have differed significantly from those of other neighbourhood centres - note that the three centres differ significantly from other neighbourhood centres only for durable goods (see Fig.C.5 for 'food' and 'durables'). On the basis

TABLE C.21

Number of households

Selected Neighbourhood centres 'D'

	Craghead	Dipton	Burnopfield	Average of 3 centres	Average of 'C' centres
Groceries	660	740	860	750	1,200
Meats	620	750	670	680	1,360
Chemist goods	730	960	920	870	1,560
Kitchen App.	230	200	190	200	260
T.V.sets	110	90	200	130	460
Cycles/Prams	-	200	110	100	250
Hardware	450	580	600	540	600
Shoes	440	310	350	370	320
Furniture	60	190	180	140	130
Men's Clothing	300	120	160	190	160
Children's Cl.	50	160	70	90	150
Jewellery	200	260	270	240	90
Women's Cl.	230	100	130	150	160
Average Foods	650	740	800	730	1,250
Average Durables	270	270	280	270	350

of population served the three centres should undoubtedly be classed as small suburban centres. The exceptional nature of these centres highlights one of the difficulties encountered in the hierarchical classification of centres viz. the co-operative store (see page 213).

The co-operative influence is very apparent from the number of consumers served for certain shopping goods. Jewellery and T.V. sets are the two items which show the most significant variations from the average for small suburban centres. In the three neighbourhood centres the number of consumers purchasing jewellery is relatively high. This is because jewellery is not commonly bought by many households in the area (less than two-thirds indicated this purchase) and among the mining community the co-operative dividend is always welcome when such purchases become necessary. On the other hand, the number of consumers for T.V. sets is very low in the neighbourhood centres. This is partly because of the absence of radio and T.V. shops but more likely because of the belated entry of co-operative societies into T.V. rental schemes - a system preferred by 7 out of every 10 customers.

For food the three neighbourhood centres serve small populations relative to small suburban centres. Only two of the small suburban centres serve less households for food

than the three neighbourhood centres. The low number of households served for food by the three centres is a function of the size of the settlements in which they are located i.e. relative to those of small suburban centres.

Conclusions

An important aim of the study of the central place system in North Durham was to discover what correlation existed between the hierarchy of centres, based on a subjective classification of central place functions, and the use made of these centres by the consumer-population. In an ideal (and static) central place system there would be a perfect correlation between the supply of and demand for central services; and further, this would be reflected in the perfect correlation between the supply of goods at any level of the hierarchy and the use made of centres at this level by consumers.

In previous studies many attempts have been made by geographers and others to develop techniques for measuring the 'centrality' of centres and their classification into a hierarchy. There have been two important methods. The first uses data on the number and type of central place establishments (or functions). This method has been used in a variety of ways in the classification of centres into a hierarchy; at one end of the scale is the traditional approach of Smailes (1944) and at the other, the mathematical framework of Berry and Garrison (1958). The second method is the measurement of the area dependent on centres for central goods and services; Bracey (1952) employed this method and was

able to classify rural service centres into three hierarchical orders. Brush and Bracey (1955) compared their results based on different centrality criteria, the first and second methods respectively (above), and found clear analogies in the spatial hierarchies of rural service centres in Southwestern Wisconsin and Southern England. In this study of the central place system the two methods are incorporated into the study of the same region and the results are thus almost fully comparable.

The findings of the study indicated that there was no direct correlation between centrality scores (based on number and types of establishments) and the numbers of consumers served (based on a survey of consumers). There was, however, clear differences between the numbers of consumers served by centres at different levels of the hierarchy which would indicate that the subjective classification of centres into a hierarchy was broadly correct. The latter finding would also appear to be the morelikely in a non-static central place system which has to continually adjust itself to changes in the distribution of population, retailing methods, consumer mobility etc.

Stanley and Houghton le Spring illustrate the low correlation that may at times exist between the consumer

survey results and the centrality scores.

Shopping centre	Centrality score	No of consumers served (Durables)	1961 Turnover Central Area Durables £'000	TOTAL £'000
Houghton le Spring	19.1	2,810	548*	1,078
Stanley	20.0	7,490	1,250*	1,785

Though there was very little difference between the centres on the centrality scores, both the consumer survey and the Census of Distribution showed that there was in fact a significant difference between the centres. The centrality score did not detect accurately the larger size and higher status of shops in Stanley e.g. 6 of the important non-food multiples were in Stanley as against 2 in Houghton le Spring. The consumer survey and the Census of Distribution, both indicate that turnover of durable goods in Stanley is about 2½ times that in Houghton le Spring; this would appear to be a more accurate representation of the actual difference between the centres.

Fig.C.5 shows the number of households served by centres at each level of the hierarchy. Note that there is some correlation between the levels of the hierarchy and the numbers of consumers served. Because of the variations in the

* small element of estimation because of non-disclosure.

provision of certain shops that occur within and between levels of the hierarchy, it would be best to refer to the two dispersion diagrams which summarise (a) food and (b) durables since these are more likely to reflect the overall centrality score of a centre.

Fig.C.5 shows that for food and durables, there are two clear breaks in the consumer distribution. There is a clear break between A.1 and A.2 centres and a smaller break between A.2 and B. centres. Below this there are less distinct breaks and the distribution of consumers served by B,C and D centres is in the form of a continuum.

Population thresholds for specialist functions

Centres	No. of households
Major shopping centres	8-10,000
Small shopping centres	4-6,000
Suburban centres	2,500-3,500
Small suburban centres	1-2,000
Neighbourhood centres	under 1,000

The above table shows that at each level of the hierarchy there is a critical population which is needed for the viable support of a centre. In practice, however, there may be a smaller distinction and at times an overlap between the hierarchical levels. Data from the survey suggest that

(a) there are clearer breaks between the higher levels than between the lower levels of the hierarchy

(b) there are smaller breaks between the hierarchical levels for food than for durables.

The smaller breaks between the hierarchical levels for food is to be expected because of the nature of consumer demand for these goods. The local orientation of food purchases is such that there is usually a high correlation between the scale of food shops provided and the size of the local population. A centre that is adequately stocked with food shops does not necessarily acquire a commensurate range of non-food shops and may, therefore, serve an exceptionally high population for a centre at its level of the hierarchy,.

The smaller breaks between the lower levels of the hierarchy can be accounted for by three facts. Firstly, the greater number of centres at these levels could, for statistical reasons, show a greater random variation from the norm. Secondly, there are more changes in status at these levels of the hierarchy since the primary function of the centres is the provision of convenience goods which is mainly a function of the character of the local population i.e. its density, distribution, increasing or decreasing size etc. Thirdly, because of the low status of these centres

there is an easy distortion of the theoretical distribution; this is clear from the exceptionally large populations served by three of the neighbourhood centres because of the presence of a co-operative store in each.

The hierarchy as determined by the provision of central place functions is, therefore, in broad agreement with data obtained through the consumer survey. Besides the sampling error of the consumer survey, differences are to a large extent due to the scale of the data used in the calculation of centrality scores and the hierarchical classification of centres. Any data short of actual turnover must of necessity contain a certain degree of inaccuracy; often it is necessary to sub-divide turnover into one or more of its component parts for the proper comparison of centres, e.g. convenience goods, durable goods, clothing etc. Further, any data that seek to classify a wide range of centres can do so only on a limited basis and any classification which seeks to summarise the diverse elements that are present in any centre into one 'score' must contain an element of error. The inaccuracies of the index of centrality used in this study are mainly the result of:

(a) a disregard of size of establishments and of floorspace in each centre. The number and type of establishment

are clearly not sophisticated enough for the computation of an accurate centrality score.

(b) the arbitrary values of the weighting scores which were applied to the number of non-food shops.

(c) the distortion of co-operative stores, particularly on the lowest levels of the hierarchy.

The fact that there was a clear correlation between the levels of the hierarchy and the number of consumers served is important. First of all, this indicates that there is substantial evidence that both techniques are potentially very useful and secondly, it indicates that the conclusions drawn from this study are also valid and of wide application.

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A P P E N D I X

SECTION 1 PART A

Table A.17

Population growth in decennial periods

Census Years	Chester le Street Township	Chester le Street Reg.District	Houghton le Spring Township	Houghton le Spring Reg. District	County Durham	England & Wales
	%	%	%	%	%	%
1801-11	3.8	6.8	36.1	42.2	10.6	14.0
1811-21	9.6	9.6	114.2	55.3	17.1	18.1
1821-31	1.0	8.0	34.9	71.7	23.6	15.8
1831-41	35.6	6.3	-12.3	-17.9	28.7	14.3
1841-51	-0.4	13.9	18.7	21.7	27.0	12.6
1851-61	16.8	32.3	16.3	11.4	30.1	11.9
1861-71	39.5	20.4	11.3	20.1	34.7	13.2
1871-81	58.0	30.2	14.5	30.5	26.6	14.4
1881-91	25.8	16.7	7.2	11.0	17.2	11.6
1891-1901	33.9	19.7	21.3	7.7	16.8	12.2
1901-21	25.2	29.8	24.1	24.7	15.3	10.9

Table A.18

% of England and Wales population living in County Durham at each census in 19th century

Census year	%
1801	1.68
11	1.63
21	1.61
31	1.72
41	1.94
51	2.18
61	2.53
71	3.02
81	3.34
91	3.50
1901	3.65

Co. Durham accounted for 1.74% of area of England & Wales

Table A.19

Growth in number of coal miners

Census periods	Co. Durham	England & Wales
	%	%
1841-51	86.5	83.9
51-61	29.6	34.5
61-71	14.1	8.7
71-81	56.4	41.2
81-91	23.2	35.7
91-01	22.7	24.7
1901-11	46.0	36.4

Table A.20

Net % gain (+) or loss (-) in Migration

Decennial Periods	Chester Reg. District	Houghton Reg.Dis.	Co.Durham	E. & Wales.
1851-61	+11.0	- 5.6	+11.5	-0.5
1861-71	- 2.4	- 0.1	+15.2	-0.4
1871-81	+ 5.0	+ 5.3	+ 3.1	-0.5
1881-91	- 4.8	-10.5	- 2.3	-2.3
1891-1901	- 0.1	-13.5	- 1.2	-0.2
1901-1911	+ 6.1	+ 1.1	- 3.1	-1.5

Table A.21

% of Durham born people enumerated in the County		% of enumerated population born in the County
%	Census Years	%
?	1841	75.4
85.7	1851	67.9
84.3	1861	67.6
84.5	1871	65.5
84.8	1881	67.6
84.2	1891	71.1
83.8	1901	74.5
78.5	1911	77.5

Table A.22

County Durham - Birthplaces of enumerated population

	1861 %
Co. Durham	67.6
Yorkshire	7.2
Northumberland	9.4
Cumberland	1.5
Westmorland	0.4
Rest of England and Wales	5.0
Ireland	5.4
Scotland	2.7
Foreign	0.8
	100.0

Table A.23

1891

% distribution of tenement sizes

	Durham %	E. & W. %
1 room	5.6	4.7
2 rooms	31.2	11.4
3 rooms	22.0	12.3
4 rooms	20.7	23.9
5 rooms or more	20.5	47.7
	100.0	100.0

Table A.24

1911

Composition of family sizes in Co. Durham in relation to similar counties in E. & Wales

No. of persons per family					
LESS THAN FOUR (LOWEST)		4-6 persons (HIGHEST)		over 6 persons (HIGHEST)	
	%		%		%
Glamorgan	29.5	Glamorgan	46.6	Glamoragan	23.9
Monmouth	31.1	Stafford	45.7	Monmouth	23.7
Durham	32.0	Durham	45.4	Durham	22.6
-		Monmouth	45.2	-	
		-			

Table A.25

All occupied persons (a) CHESTER LE STREET REG.DISTRICT

Occupation groups	% 1a	% 2a	% 3a	% 4a	% 5a	% 6a	% 7a	% 8a	% 9a	% 10a	% 11a	% 12a	% 13a	% 14a	% 15a	% 16a	% 17a	% 18a	% 19a	
Prof.service	4	2	3	1	2	1	2	2	2	1	1	3	*	1	1	1	1	5	6	1.9
Domestic serv.	14	6	14	6	7	6	12	7	4	10	2	12	9	7	12	16	14	31	18	8.8
Agriculture	11	4	16	3	8	10	15	10	10	8	3	11	14	-	16	20	11	34	18	9.3
Coal miners	7	66	40	68	12	58	45	40	61	59	88	51	50	1	57	38	42	24	21	46.7
Crafts & Industry	38	11	13	9	53	10	14	20	10	16	3	13	9	40	8	15	27	3	34	18.7
Dist. Trades	17	5	7	5	11	10	6	7	12	4	3	5	3	3	1	3	3	3	3	7.5
Labourers	9	6	7	8	8	5	6	14	1	2	-	5	15	48	5	7	2	-	-	7.1
TOTAL	1109	1275	1255	1004	825	740	659	617	514	492	371	295	226	177	149	137	111	38	33	10,027

Townships	Reg. District
Chester le Street	
Gt. & Lt. Usworth	
Lamesley	
Pelton	
Birtley	
Witton Gilbert	
Harraton	
Washington	
Gt. Lumley	
Urpeth	
Waldridge	
Burnmoor	
Plawsworth	
Barmston	
Ouston	
Edmondsley	
Lt. Lumley	
Cocken	
Lambton & S. Biddick	

Table A.25

All occupied persons (b) HOUGHTON LE SPRING REG. DISTRICT

Occupation groups	% 1b	% 2b	% 3b	% 4b	% 5b	% 6b	% 7b	% 8b	% 9b	% 10b	% 11b	% 12b	% 13b	% 14b	% 15b	% 16b	%
Professional service	4	2	2	1	1	3	*	2	1	2	3	-	-	-	-	10	2.1
Domestic service	13	6	8	10	9	9	6	5	28	22	19	4	26	7	4	30	9.6
Agriculture	5	3	11	9	5	8	3	12	53	40	10	38	17	47	52	50	8.1
Coal miners	31	57	40	36	55	58	79	38	-	10	43	2	13	33	7	-	44.7
Crafts & Industry	20	10	19	15	12	5	5	12	7	9	17	28	7	-	11	-	13.5
Distributive trades	19	13	8	8	9	8	6	9	-	10	4	7	7	3	-	-	11.4
Indefinites	8	9	12	21	9	9	1	22	11	7	4	21	30	10	26	10	10.6
TOTAL occupied	1734	2199	1041	850	574	524	359	278	140	110	91	53	30	30	27	10	8,055

Townships	Houghton le Spring	Hetton le Hole	Newbottle	Penshaw	E. Rainton	W. Rainton	Moorsley	W. Herrington	Silksworth	E. & M. Herrington	Morton Grange	Offerton	Moorhouse	Gt. Eppleton	Warden Law	Lt. Eppleton	Reg. District

* Less than 1%

Table A.26

1861

Males per 10,000 of total population

Age Gps. years	Chester Tp.	Houghton Tp.	Chester Reg.Dis.	Houghton Reg.Dis.	Co.Durham	E.& W.
0-4	717	746	776	763	776	675
5-14	1065	1250	1251	1276	1185	1112
15-24	1032	899	1075	942	980	906
24-34	800	629	743	692	777	696
35-44	524	516	548	538	575	569
45-54	415	412	389	393	395	421
55-64	226	276	245	254	235	281
65+	246	204	152	196	153	210
TOTAL	5025	4932	5179	5054	5076	4870

Table A.27

1911

Coal miners as % of occupied males aged 10 years or more

Urban District of	%
Stanley	78.8
Annfield Plain	77.1
Tanfield	75.3
Ryton	72.7
Hetton	72.3
Houghton le Spring	62.7
Blaydon	62.0
Chester le Street	61.0
Benfieldside	23.0*
Consett	13.8*

* Consett Iron Works account for the low proportion

A P P E N D I X

SECTION 1 PART B

Table B.27

1951 Occupations of those employed in

	Chester le Street U.D.		Houghton le Spring U.D.	
	males %	females %	Males %	females %
Agriculture	0.5	0.3	2.0	1.0
Mining	41.9	0.5	47.6	1.8
Manufacture	8.7	33.3	11.1	22.8
Building & C.Eng.	8.8	0.7	9.8	0.3
Transport & Communication	14.9	6.0	9.4	5.6
Distributive Trades	8.3	22.7	7.5	28.4
Professional & Scientific serv.	12.7	20.8	8.7	19.2
Other services	4.2	15.7	3.9	20.9
TOTAL employed	5,296	2,235	6,756	1,843

Table B.28

Employment - Workplace and Residence

Out-movement	1951 Chester le Str. %	1951 Houghton le Spr. %	1961 Chester le Str. %	1961 Houghton le Spr %
% age of occupied residents in employment working elsewhere	42.1	41.3	44.9	41.8
" males	43.0	40.8	45.5	39.2
" females	39.1	43.0	43.1	49.7
In-movement				
% age of workers resident elsewhere	42.1	19,9	39.9	23.9
" males	38.3	18.2	35.2	23.8
" females	50.9	26.0	49.6	24.5
Job Ratio				
Employment in area as % age of occupied residents	94.8	69.4	91.3	76.4
" males	87.5	69.0	83.5	79.6
" females	118.1	71.0	112.8	66.7
Females as % age of total working in the U.D.	29.7	21.4	32.6	21.2

Table B.29

Chester le Street U.D. - Employment

Resident in U.D. but working elsewhere

	Males		Females	
	1951 %	1961 %	1951 %	1961 %
Chester le Street R.D.	56.4	52.1	33.3	37.9
Gateshead	8.4	9.7	19.1	16.1
Durham M.B.	3.8	4.7	7.8	11.5
Stanley U.D.	5.0	4.7	2.2	3.4
Houghton le Spring U.D.	1.2	3.1	1.8	2.3
Sunderland C.B.	2.2	2.3	1.4	1.1
Durham R.D.	2.2	2.3	0.4	1.1
Rest of Co.Durham	6.7	6.3	5.3	3.6
Newcastle	11.5	13.2	27.1	21.8
Rest of Northumberland	1.0	0.8	1.2	1.2
Rest of England & Wales	1.6	0.8	0.4	-
TOTAL	2,604	2,570	739*	870*

* Based on 10% sample

Table B.29 contd...

Table B.29 (contd..)

Working in the U.D. but resident elsewhere

	Males		Females	
	1951 %	1961 %	1951 %	1961 %
Chester le Street R.D.	63.1	59.6	56.7	71.7
Durham M.B	2.8	3.6	1.1	1.8
Stanley U.D.	2.8	2.4	7.8	2.6
Houghton U.D.	6.0	5.4	15.0	8.8
Washington U.D.	1.2	1.8	1.6	1.8
Lanchester R.D.	1.8	2.4	1.8	3.5
Durham R.D.	7.8	2.4	3.3	4.4
Rest of Co. Durham	7.5	12.8	11.4	5.4
Newcastle	2.8	5.4	0.7	-
Rest of Northumberland	1.2	3.0	0.5	-
Rest of England & Wales	3.0	1.2	0.1	-
TOTAL	2,031	1,660*	1,138	1,130*

* Based on 10% sample

Table B.30

Houghton le Spring - Employment

Resident in U.D. but working elsewhere

	Males		Females	
	1951 %	1961 %	1951 %	1961 %
Sunderland C.B.	12.0	17.3	33.3	54.1
Hetton U.D.	13.3	15.3	4.6	1.4
Washington U.D.	8.3	10.0	16.9	13.7
Durham M.B.	2.1	5.8	5.6	3.4
Chester R.D.	39.3	22.8	5.3	4.8
Sunderland R.D.	7.2	7.0	3.5	2.0
Chester U.D.	3.1	2.5	15.3	6.8
Rest of Co.Durham	10.0	13.5	6.3	6.3
Northumberland	3.8	3.9	7.7	6.8
Rest of England & Wales	0.9	1.9	1.5	0.7
TOTAL	3,998	3,590*	1,115	1,460*

* Based on 10% sample

Table B.30 contd....

Table B.30 (contd...)

Working in U.D. but resident elsewhere

	Males		Females	
	1951 %	1961 %	1951 %	1961 %
Sunderland C.B.	16.1	19.1	10.4	8.3
Hetton U.D.	37.9	3.5	48.8	2.1
Washington U.D.	3.6	6.4	2.3	6.2
Durham M.B.	1.9	*	0.4	*
Chester U.D.	2.5	4.6	2.7	4.2
Chester R.D.	13.8	23.1	13.8	16.7
Sunderland R.D.	11.1	11.6	6.9	12.5
Durham R.D.	4.0	12.1	4.0	12.5
Rest of Co. Durham	8.0	15.0	10.1	35.4
Northumberland	-	-	-	-
Rest of England & Wales	1.1	4.6	0.6	2.1
TOTAL	1,232	1,730*	480	480*

* Based on 10% sample

Table B.31

North Lodge Estate - All employed persons

	Previous residence		
	Chester le Str. %	elsewhere %	TOTAL %
Chester le Street U.D.	15.6	39.4	20.7
Chester le Street R.D.	20.5	27.3	21.9
Newcastle	18.9	12.1	17.4
Gateshead	18.0	6.1	15.5
Rest of Tyneside	9.0	3.0	7.7
Durham M.B.	1.6	3.0	1.9
Sunderland	1.6	-	1.3
Rest of Co.Durham	4.9	-	3.9
Others	9.9	9.1	9.7
TOTAL	122	33	155

APPENDIX

SECTION 2 PART C

Appendix

The survey was carried out in May/June 1965. The sample of households was chosen randomly from valuation lists in the District Councils of the area. The Valuation list was considered preferable to the Electoral Register for the following reasons:

(a) households were to be classified by types of houses occupied and this was readily available for the Valuation List

(b) only private households were to be included and the Valuation List facilitated the exclusion of hotels etc.

The number of households to be included in the sample was dependent on three factors

(a) the area to be surveyed

(b) the population of the survey area

(c) a manageable sample size.

The survey area was chosen and was found to contain 90,167 private households in 1961. A manageable sample size was reckoned to be in the region of 3,000 households.

The actual sample proportion in each parish or ward was decided by an arbitrary scale. The sample proportion decreased logarithmically from 10% for administrative units with 100 households to 2.5% for those with 3,000 households. Since there was no way of estimating what the minimum sample size should have been, it was decided that the above scale would offer a satisfactory

sample size in both the small and large administrative units.

The survey was carried out with the co-operation of several schools in the area - indeed without their help the survey could not have been carried out on the same scale. Grammar schools were first approached, partly for the greater responsibility of the pupils but especially because of the wide distribution of the pupils' homes. To ensure a fair control on the distribution and collection of the questionnaires it was thought necessary to limit the number of schools. In certain areas which were not adequately covered by Grammar schools or whose Grammar schools refused to cooperate, assistance was obtained from the local Secondary Modern Schools. In all schools the survey was carried out with the assistance of either the headmaster or the Geography master and the third and fourth forms were generally used.

Interview Method

Each school was asked to draw up a list of volunteers' addresses and each volunteer was given a batch of not more than 10 questionnaires with addresses that were for the most part within a quarter of a mile from their home - in several cases the home address was already included in the sample.

Volunteers were asked to have the form completed in their presence - the form of the questionnaire was simple enough to be within the capability of all volunteers. Instructions

were printed at the back of each questionnaire and the volunteers were further briefed by the master in charge. The main difficulty was in finding someone at home; the volunteers were, therefore, specially asked not to push the form through the letter boxes in cases where no one was at home but to call at least three times before giving up. In order to ensure an adequately high response rate (due to the already low sample) volunteers were asked to attempt, after the third unsuccessful call to have the form filled in at the nearest available house with an appropriate mark to indicate the new address (substitute households were invariably one or two houses away). Finally each volunteer was asked to have a form filled in at his own home.

Response

The number of households in the final sample was 3,076 - about twenty of these were not distributed either because the address could not be found or were isolated farms. About 2,800 were distributed to the co-operating schools and the rest were done by myself.

The number of completed questionnaires was 2,830 which included the homes of volunteers (about 300) and substitute households (about 300) but excludes those questionnaires that were judged to be unsatisfactory - these were often the work of a particular pupil and in several cases the homes were revisited.

The completed forms were 92% of the original sample total but over 20% of the completed forms were volunteers' homes or substitute addresses. The 'actual' response rate was therefore about 70%. There was no reason to suspect that the inclusion of substitute and volunteer households would cause any bias and so they were considered indistinguishable from the other households in all subsequent analyses.

The response rate varied by area and by type of household. In no administrative unit, however, was the number of completed forms allowed to drop below 70% of the sample total - this was used as a minimum response level. Households in the lowest valued private houses (Grade 3) had the lowest response rate - 85%; while households in the other three types of houses showed much the same response rate - about 95%. The above disparity is due to three factors

(a) many of the Grade 3 houses had been demolished in slum clearances or were vacant

(b) the high proportion of older people in Grade 3 houses especially widows - as a result there was a high refusal rate and many unsatisfactorily completed forms

(c) the bias towards the other houses by the inclusion of volunteers' homes. As a result though Grade 3 households formed 29% of the original sample they formed only 27% of completed forms.

Table C.22

Expenditure on each questionnaire item

	Item	shillings/average household/year
Food	weekly groceries	2934
	butcher's meat	1130
	TOTAL FOOD	4064
Durables	Women's clothing	674
	Furniture	547
	Men's clothing	414
	Hardware	340
	Shoes	332
	T.V.sets	276
	Chemist goods	268
	Children's clothing	204
	Kitchen appliances	172
	cycles/prams	44
	TOTAL Durable goods	3381

Comparison of survey results with the Census of Distribution.

It has already been noted that for several reasons direct comparison between the turnover suggested by the survey and the published figures for the Census of Distribution was not feasible (see page 202). Limited comparison is, however, possible on a compromise basis i.e. the average number of households by each area or centre can be transformed into turnover using the per household expenditure calculated from the Census of Distribution for the Northern Region.

Table C.24 shows the adjusted turnover (for non-response) in 1961 and the estimated turnover from the survey data. Information is given only for durable goods and is restricted to urban and rural districts; the first because the survey is less accurate in detecting food expenditure and the second because of the form of the published figures.

For many reasons differences are to be expected between the estimated and actual (adjusted) turnover in each area. Briefly these differences may arise from:

(a) sampling variation from the norm

(b) the incompleteness of the questionnaire - the omission of certain less important goods may cause an underestimation of a particular area's turnover e.g. in the lower order centres

(c) the exclusion of chance purchases made by households from beyond the survey area

(d) variations in the expenditure of households of different social class

(e) variations in the non-response rate of the Census for the different administrative units

(f) changes in population since 1961 - the new housing estates affect the percentages of turnover that is retained by the local centres.

All in all it should be expected that estimated turnover would be up to 10% less than the actual turnover for 1961 in most areas - allowing for some of the above factors.

Table C.24 shows that of the ten administrative districts five had estimated turnovers of between 87% and 103% of the actual turnover. There were three districts between 74 and 80% and two exceptionally high districts with 142% and 183%.

Estimated turnover for Chester le Street, Consett, Houghton le Spring, Stanley and Chester le Street R.D. are reasonably near the actual turnover. The underestimation for the first four areas may be due to the import of casual trade from beyond the survey area; for instance Chester le Street and Houghton le Spring can be expected to have been most affected by the exclusion of trade from beyond the survey area while Stanley will have been affected least. Chester le Street's nodality would enable it to draw on customers from areas like

Durham and parts of Brandon U.D. to the south west; in the case of Houghton le Spring a small part of its trade area was inadvertently excluded i.e. the area to the south-east (see Fig. B.15).

Hetton (74%), Blaydon (75%) and Washington (80%) are far below the sample error range. In all three areas there is a large outflow of trade to the regional centres and the survey would probably underestimate the local turnover. In the case of Hetton U.D. a further factor is the exclusion of the area immediately to the south - the same area that is attracted to Houghton le Spring. In Blaydon the low estimated turnover was probably caused by

(a) the exclusion of trade attracted from outside the survey area e.g. Whickham

(b) the effects of the redevelopment of the shopping centre which was begun after 1961 and was in progress at the time of the survey.

Estimated turnover for Ryton U.D. (142%)and Lanchester R.D. (183%) are exceptionally higher than the actual turnover. In both areas the 1961 turnover is so low that the non-response element may be considerable - in fact the non-response rate was higher for smaller retail establishments, the types which would be found in these centres. In Ryton U.D. the high estimated turnover is almost certainly because of increased

turnover in the local shopping centres - the new block of shops opened in Ryton in late 1960 and the increased turnover of the radio and T.V. shop at Crawcrook which has expanded considerably since the census date (private communication) - the importance of such small increases would have considerable affect on the already small turnover of 1961.

In Lanchester R.D. Langley Park (Esh Parish) contains 40% of the population and 75% (estimated) of the retail turnover. Langley Park is an old declining mining village and 95% of the sampled population lived in Grade 3 (mostly N.C.B. houses) and council houses. The consumer orientation of these households is very localized but it is also clear that the actual expenditure of the households is less than the average for all households - particularly for durable goods. (The estimated turnover for food was virtually the same as that of the Census).

There was, therefore, an overall similarity between turnover based on the survey and that of the Census of Distribution. This is an important check on the validity of the questionnaire answers and hence the discussion of the nature of the hierarchy of centres presented in this thesis.

The Ryton/Blaydon Area

The Ryton/Blaydon area has already been noted as an exceptional area. This was because of the disproportionately high percentage of durable goods expenditure attracted to Newcastle. The reason for this is the absence of a shopping goods centre in the area; as a result Newcastle attracts a large proportion of the lower order goods expenditure. The question raised is why is there no shopping goods centre in the area and what is the likelihood of one establishing itself in the future. This is essentially a question of accessibility and the density and distribution of population.

The two urban districts have a combined population of about 45,000 with a density of just over 3 persons per acre - this is about the average for smaller urban districts in North Durham. The area is bounded on three sides by rivers - to the north by the Tyne and to the south and east by the Derwent; on the fourth side (west) there is an elevated, thinly populated and predominantly rural area. See Fig.A.1.

A population of 45,000 could serve as the minimum for a major shopping centre and would be adequate for a small shopping centre - provided that it were possible for the centre to be located in a central place so as to minimize travel and so maximize its attractive power. Because of the physical isolation of the area (relief and rivers) there would be little

loss of trade to competing centres other than the regional centre.

Relief and economic (mining history) factors have, however, prevented the growth of a shopping goods centre and instead there is an unparalleled occurrence of two suburban centres, four small suburban centres and several neighbourhood centres to serve the 8 or 9 settlements in the area.

Relief factors

In the centre of the area there is a ridge of high ground which falls off to the north, south and east. Straddling this ridge are three of the settlements: Greenside, High Spen and Chopwell. On the low lying land encircling this ridge lies Crawcrook, Ryton, Crookhill, Rowlands Gill and Blaydon/ Winlaton. The favourability of elevated ground (thicker seams) in the early stages of mining development encouraged the fragmentation of the settlement pattern.

As a result of relief factors there is generally a low accessibility from one settlement to another. For instance, the distance from Chopwell to Blaydon (the largest centre in the area) in a straight line is 5 miles, the time taken by bus is 30 minutes; by a devious route it is only 10 minutes more to Newcastle. Again, Rowlands Gill is just over three miles from Blaydon and 8 miles from Newcastle (by road); there is an infrequent bus service to Blaydon and the time taken is 15 minutes, to Newcastle it is only 20 minutes and there are several

buses per hour.

There is, in fact, no common accessible point throughout the area. Blaydon is the largest centre and seems to be the most likely growth centre but its remote situation in the north-east of the area severely restricts its growth potential. The difficulty of access to Blaydon and the relatively easy route beyond it to Newcastle are unfavourable factors. As a result Newcastle draws a higher than normal percentage of durable goods expenditure from the whole of this area. The relief and road layout suggest a funnelling into Newcastle and the area has probably been dominated by the regional centre for a long time. At the present time there seems to be an increase in Newcastle's influence. This is suggested by the growing commuterization of the area by Tynesiders, the revolutionary pattern of retailing with a greater centralization in the towns and the increased mobility of consumers. **Table C.23 shows the percentage of durable goods expenditure that is attracted to Newcastle.**

Table C.23

% of durable goods expenditure attracted to Newcastle

Ryton/Blaydon Wards	Road Distance	%	Norm for this distance
Blaydon	5 miles	71.5	62.1
Winlaton	5 miles	74.9	
Crookhill	6 miles	75.6	60.1
Ryton	7 miles	70.5	55.8
Crawcrook	8 miles	64.3	46.2
Rowlands Gill	8 miles	78.5	
Ryton Woodside	8 miles	81.1	
High Spen	10 miles	66.6	37.8
Chopwell	12 miles	60.1	38.0

TABLE C.24

Turnover in Durable goods

	(a) Survey £'000	(b)(adjusted) Census £'000	$\frac{a}{b}$ x 100
Hetton U.D.	377	510	74%
Blaydon U.D.	549	729	75%
Washington U.D.	482	604	80%
Chester le Street U.D.	1,936	2,216	87%
Houghton le Spring U.D.	907	1,024	89%
Consett U.D.	1,884	2,010	94%
Stanley U.D.	2,133	2,213	96%
Ryton U.D.	252	177	142%
Chester le Street R.D.	430	419	103%
Lanchester R.D.	203	111	183%

Table C.25

Percentage spent on Durable goods at the regional centres at each mile-distance

Miles	Grade 1	Grade 2	Grade 3	Council	All Households
5 miles	83.1	68.4	67.9	65.0	68.8
6 miles	74.4	63.2	64.1	58.8	63.9
7 miles	69.0	59.0	54.4	49.4	58.1
8 miles	67.6	63.1	61.5	47.2	57.8
9 miles	54.6	40.8	36.4	35.9	39.7
10 miles	62.4	53.9	37.0	30.0	37.8
11 miles	54.8	34.0	29.1	33.3	36.1
12 miles	60.0	41.2	40.0	32.1	38.0
13 miles	52.3	42.9	29.6	26.9	33.6
14 miles	44.9	36.2	31.3	36.1	36.5
15 miles +	41.4	29.8	25.9	29.9	29.9
All H'holds	64.9	50.1	47.3	43.0	48.8

Table C.26

Percentage of households purchasing each item at the regional centres

Items	Grade 1	Grade 2	Grade 3	Council	All Households
Women's clothing	84.2	71.1	69.5	66.3	70.8
Jewellery	83.0	72.0	68.1	63.4	69.6
Children's clothing	75.8	60.8	60.7	58.4	62.3
Men's clothing	74.2	60.8	59.5	52.7	59.3
Furniture	82.2	60.3	56.2	49.8	58.4
Shoes	66.8	48.8	41.7	38.9	45.7
Cycles/prams	58.9	49.0	41.7	35.3	43.3
Kitchen App.	50.5	37.1	34.8	30.1	36.1
Hardware	48.2	28.8	24.1	19.7	27.0
T.V.Sets	37.5	25.8	24.6	20.3	25.0
Chemist goods	7.4	5.1	3.1	2.9	4.0
All Durable Goods	64.9	50.1	47.3	43.0	48.8

Table C.27

Percentage of households purchasing each item at convenience goods centres i.e. 'B' and lower

Items	Grade 1	Grade 2	Grade 3	Council	All Households
Women's clothing	2.5	6.3	8.0	8.3	7.0
Jewellery	1.5	6.2	4.7	5.2	4.5
Children's clothing	3.7	7.4	8.0	7.5	7.0
Men's clothing	2.8	7.5	7.8	7.9	7.0
Furniture	0.6	7.0	8.6	8.6	7.0
Shoes	5.7	14.7	18.3	17.3	15.3
Cycles/Prams	2.8	9.3	8.7	12.0	9.1
Kitchen App.	2.0	12.9	12.3	14.3	10.8
Hardware	10.3	27.3	27.9	29.4	25.5
T.V. sets	11.3	21.6	26.1	21.7	21.2
Chemist goods	33.6	52.9	55.8	51.8	50.0
All Durable goods	6.5	14.7	16.4	16.0	14.3

TABLE C.28

Results of χ^2 tests for significance of differences between the shopping habits of Grade 1 households and Council households.

All significant results (* = at or below .05 level of probability) indicate that a higher proportion of Grade 1 households shopped in the regional centres for a particular item.

Distance	Men's clothing	Children's clothing	Jewellery	Cycles/ Prams	T.V. sets	Women's clothing	Kitchen App.	Shoes	Hard ware	Furniture
5 miles	*			*		*	*		*	*
6 miles				*	*		*	*	*	*
7 miles			*	*	*	*	*	*	*	*
8 miles					*	*		*	*	*
9 miles		*					*	*	*	*
10-11 miles		*	*	*	*	*	*	*	*	*
12-13 miles	*		*			*	*	*	*	*
14 miles								*		
All H'holds	*	*	*	*	*	*	*	*	*	*

Table C.29

Percentage of households purchasing each item at the regional centres

	Grade 1		Grade 2		Grade 3		Council		All Households	
	Car	Non-car	Car	Non-car	Car	Non-car	Car	Non-car	Car	Non-car
Women's Clothing	85.8	80.7	79.7	65.0	71.9	68.3	72.8	63.8	77.7	66.6
Jewellery	85.1	77.3	71.8	72.2	69.7	67.1	68.4	60.9	74.3	65.9
Children's Cl.	76.3	74.0	66.8	55.1	61.0	60.5	60.5	57.5	66.3	59.2
Men's Clothing	77.6	65.7	65.8	57.0	60.9	58.8	57.6	50.8	65.7	55.1
Furniture	82.9	80.6	67.1	55.3	61.0	53.7	55.5	47.7	66.7	53.0
Shoes	68.1	63.8	52.9	46.0	45.8	39.8	42.1	37.8	52.6	41.6
Cycles/Prams	61.8	49.1	51.4	46.3	49.4	34.9	38.1	33.6	48.5	37.0
Kitchen App.	53.1	44.4	40.4	34.5	40.4	32.0	32.9	29.0	42.0	32.0
Hardware	52.8	37.5	34.0	25.1	31.0	20.8	20.6	19.4	34.9	22.1
T.V.sets	41.6	27.2	23.9	27.1	25.7	24.1	18.7	24.1	29.6	22.1
Chemist goods	9.8	2.1	6.1	4.3	4.5	2.5	3.2	2.8	6.0	2.8
Durable goods	67.3	59.1	55.1	46.4	50.9	45.4	47.1	41.3	55.4	44.6

TABLE C.30

Percentage of households purchasing each item at convenience goods centres

	£57 and over		£31-£56		£30 and under		Council		All Households	
	Cars	Non-cars	Cars	Non-cars	Cars	Non-cars	Cars	Non-cars	Cars	Non-cars
Women's Cl.	1.6	4.6	3.7	8.2	3.9	10.0	3.8	9.9	3.1	9.2
Jewellery	1.1	2.7	7.9	4.8	3.2	5.6	3.8	6.0	3.5	5.4
Children's clothing	2.8	6.5	3.8	10.9	7.3	8.5	3.6	9.2	4.3	9.1
Men's Cl.	1.0	7.4	4.5	9.7	6.1	8.7	4.0	9.3	3.6	9.0
Furniture	0.6	0.4	4.3	8.9	5.2	10.3	4.4	10.4	3.4	9.3
Shoes	3.8	9.7	9.2	18.6	11.8	21.3	12.1	19.3	9.0	19.0
Cycles	3.2	1.8	9.1	9.6	6.6	10.5	10.2	13.2	7.2	11.0
Kitchen App.	1.7	2.8	7.9	11.4	9.8	13.6	11.9	15.4	7.6	13.1
Hardware	9.9	11.0	24.9	29.1	21.5	31.0	23.2	31.7	19.1	29.5
T.V. sets	10.9	12.1	21.4	21.8	24.3	27.0	18.8	23.0	18.1	23.1
Chemist gds.	33.6	33.7	52.0	55.6	52.4	57.3	42.4	55.2	43.6	53.9
ALL DURABLES	5.7	8.3	12.2	16.7	12.6	18.4	11.3	18.0	10.0	17.1

Table C.31

The percentage of custom spent in (a) Chester le Street and (b) all major shopping centres (including Chester le Street), by households at each successive mile distance.

	Groceries		Meats		Chemist goods		Kitchen appliances	
	Chester %	C.C.S. %	Chester %	C.C.S. %	Chester %	C.C.S. %	Chester %	C.C.S. %
1 mile	94.5	87.4	93.9	82.6	98.1	87.4	85.8	78.6
1-2 mile	65.0	56.7	62.5	44.2	65.0	56.3	69.8	70.1
2-3 "	34.8	34.4	26.6	26.8	36.4	38.1	38.2	40.8
3-4 "	9.2	8.8	6.2	6.6	7.4	7.8	28.9	23.5
4-5 "	2.5	3.9	1.9	2.2	1.3	3.1	5.9	7.8
5-6 "	-	1.0	0.4	0.4	-	1.0	1.6	1.8

	T.V. Sets		Cycles/Prams		Hardware		Shoes	
1 mile	74.1	77.4	77.9	70.3	80.9	78.6	60.4	66.2
1-2 mile	58.0	66.0	56.3	67.1	64.8	62.5	49.0	53.8
2-3 "	29.7	38.9	22.7	33.1	33.9	35.4	28.4	28.0
3-4 "	15.9	20.1	11.5	13.8	13.4	11.7	13.0	13.0
4-5 "	3.8	6.8	4.4	7.1	4.0	6.9	4.1	6.0
5-6 "	1.5	2.7	0.7	3.9	1.5	1.7	1.1	2.1

	Furniture		Men's Clothing		Children's Cl.		Jewellery	
1 mile	62.9	57.4	60.2	54.5	44.1	46.7	56.7	38.2
1-2 mile	48.5	49.8	46.3	43.8	32.5	42.8	40.8	36.2
2-3 "	29.8	30.0	34.4	28.6	26.6	27.9	29.6	22.4
3-4 "	19.3	15.9	22.0	16.3	11.6	9.9	11.1	10.0
4-5 "	5.2	5.6	3.5	4.5	2.9	4.4	1.3	2.9
5-6 "	0.7	2.5	1.3	1.1	0.5	1.7	-	1.5

/contd....

Table C.31 (contd...)

	Chester %	C.C.S. %	Chester %	C.C.S. %	Chester %	C.C.S. %
	Women's Clothing		Food		Durables	
1 mile	35.1	36.3	94.4	86.1	62.8	60.0
1-2 mile	27.6	31.6	64.3	53.3	47.8	49.3
2-3 "	17.5	16.7	32.6	32.3	28.8	29.2
3-4 "	8.9	7.6	8.4	8.2	14.7	13.1
4-5 "	2.2	3.3	2.3	3.4	3.5	5.0
5-6 "	1.1	0.9	0.1	0.8	1.0	1.7

Table C.32

The average percent of custom spent in the major shopping centres by households at six successive mile radii from the centres and also the percent of custom spent in each of the competing groups of centres - regional centres (R.C.) other shopping centres (A's) and convenience goods centres (B.C.D.)

	Groceries				Meats			
	M.S.C.	R.C.	A's	B.C.D.	M.S.C.	R.C.	A's	B.C.D.
1 mile	87.4	0.8	1.2	10.6	82.6	0.5	0.7	16.2
1-2 mile	56.7	2.6	1.5	39.2	44.2	1.5	2.0	52.2
2-3 "	34.4	1.8	6.9	56.9	26.8	1.8	5.6	65.8
3-4 "	8.8	2.8	22.4	65.9	6.6	4.1	16.7	72.5
4-5 "	3.9	2.4	41.4	52.2	2.2	2.9	37.0	57.9
5-6 "	1.0	1.6	64.8	32.6	0.4	2.0	62.0	36.5
	Chemist goods				Kitchen Appliances			
1 mile	87.4	1.3	0.5	10.8	78.6	17.6	3.4	0.4
1-2 mile	56.3	2.4	2.0	39.3	70.1	17.4	3.8	8.7
2-3 "	38.1	4.0	8.5	49.4	40.8	32.5	12.8	13.9
3-4 "	7.8	4.5	17.8	69.8	23.5	19.5	39.7	17.3
4-5 "	3.1	2.9	48.1	45.8	7.8	27.6	55.6	8.9
5-6 "	1.0	3.0	66.2	29.8	1.8	31.1	62.2	4.9
	T.V.Sets				Cycles/Prams			
1 mile	77.4	12.7	7.1	2.8	70.3	23.1	5.8	0.8
1-2 mile	66.0	17.2	9.1	7.6	67.1	23.5	7.4	2.0
2-3 "	38.9	16.4	19.1	25.6	33.1	41.1	17.2	8.6
3-4 "	20.1	21.2	39.6	19.1	13.8	34.6	34.6	16.9
4-5 "	6.8	19.2	60.3	13.7	7.1	38.1	49.3	5.5
5-6 "	2.7	20.2	66.3	10.8	3.9	39.0	52.6	4.5
	Hardware				Shoes			
1 mile	78.6	16.7	2.6	2.1	66.2	29.1	3.2	1.5
1-2 mile	62.5	15.7	3.2	18.7	53.8	32.1	1.8	12.3
2-3 "	35.4	21.9	8.6	34.1	28.0	39.5	9.9	22.6
3-4 "	11.7	20.1	29.7	38.5	13.0	41.7	24.5	20.8
4-5 "	6.9	23.7	51.6	17.8	6.0	43.2	38.0	12.9
5-6 "	1.7	26.5	57.5	14.3	2.1	44.3	45.3	8.3

Table C.32 (contd...)

	Funniture				Men's Clothing			
	M.S.C.	R.C	A's	B.C.D.	M.S.C	R.C.	A's	B.C.D.
1 mile	57.4	38.8	3.4	0.4	54.5	42.0	2.7	0.8
1-2 mile	49.8	42.2	2.5	5.5	43.8	47.2	2.4	6.7
2-3 "	30.0	48.0	9.6	12.3	28.6	50.4	11.6	9.3
3-4 "	15.9	45.0	27.4	11.6	16.3	46.9	22.4	14.4
4-5 "	5.6	54.4	36.1	4.0	4.5	56.0	33.0	6.5
5-6 "	2.5	54.1	40.4	3.0	1.1	61.2	34.2	3.5
	Children's Cloth.				Jewellery			
1 mile	46.7	47.3	4.5	1.5	38.2	59.2	2.5	-
1-2 mile	42.8	49.8	4.8	2.6	36.2	52.7	3.8	7.2
2-3 "	27.9	53.6	10.8	7.7	22.4	61.1	8.5	8.0
3-4 "	9.9	60.6	19.8	9.7	10.0	63.8	18.0	8.2
4-5 "	4.4	61.6	29.3	4.7	2.9	68.4	24.0	4.7
5-6 "	1.7	61.0	33.1	4.1	1.5	71.5	24.6	2.4
	Women's Clothing				Food			
1 mile	36.3	60.9	1.7	1.2	86.1	0.7	1.0	12.2
1-2 mile	31.6	60.3	2.3	5.8	53.3	2.3	1.6	42.8
2-3 "	17.6	64.2	7.8	10.4	32.3	1.8	6.5	59.4
3-4 "	7.6	66.8	11.9	10.5	8.2	3.1	20.8	67.8
4-5 "	3.3	70.0	21.1	5.6	3.4	2.5	40.2	53.8
5-6 "	0.9	71.1	23.4	4.6	0.8	1.7	64.0	33.4
					Durables			
1 mile					60.0	34.0	3.0	2.0
1-2 mile					49.3	36.8	3.2	10.6
2-3 "					29.2	42.1	10.4	18.3
3-4 "					13.1	41.6	24.4	20.9
4-5 "					5.0	46.1	37.6	11.3
5-6 "					1.7	47.4	43.0	7.9

Table C.33

The average percent of custom spent in the small shopping centres by households at three successive mile radii from the centres and also the percent of custom spent in each of the competing groups of centres - regional centres (R.C), other shopping centres (A's) and convenience goods centres (B.C.D.)

	Groceries				Meats			
	S.S.C.	R.C.	A's	B.C.D.	S.S.C.	R.C.	A'S	B.C.D.
1 mile	80.6	3.6	0.8	15.4	74.9	3.7	1.2	20.2
1-2 mile	22.6	3.9	2.6	71.0	17.5	2.6	3.0	76.9
2-3 mile	3.9	4.8	13.8	77.5	4.0	5.5	9.5	81.0
	Chemist goods				Kitchen Appliances			
1 mile	93.8	2.8	1.2	2.2	54.9	33.1	8.0	4.0
1-2 mile	25.6	3.4	2.2	68.7	41.8	29.0	7.9	21.2
2-3 mile	8.0	4.7	12.9	74.4	11.2	48.5	22.7	17.6
	T.V. Sets				Cycles/Prams			
1 mile	70.3	20.3	5.5	3.8	46.4	46.4	6.4	0.7
1-2 mile	43.3	25.6	7.6	23.5	28.5	47.8	8.1	15.6
2-3 mile	9.8	37.6	20.3	32.3	13.0	58.4	14.3	14.3
	Hardware				Shoes			
1 mile	59.3	33.1	2.8	4.7	26.5	62.0	7.6	4.0
1-2 mile	34.6	23.7	12.2	29.4	14.2	55.9	5.1	24.8
2-3 mile	7.3	37.9	18.7	36.2	4.6	54.2	19.0	22.2
	Furniture				Men's Clothing			
1 mile	23.2	69.9	5.5	1.4	14.3	75.1	9.4	1.2
1-2 mile	9.5	80.0	5.3	5.3	10.7	69.8	9.7	9.9
2-3 mile	1.8	76.2	15.3	6.7	4.1	68.4	21.6	5.9
	Children's Clothing				Jewellery			
1 mile	19.7	74.0	4.9	1.4	9.0	88.5	1.5	1.0
1-2 mile	8.9	70.3	5.3	15.6	6.1	84.9	3.3	5.7
2-3 mile	2.5	75.0	17.0	5.5	2.5	75.8	17.8	3.8
	Women's Clothing				Food			
1 mile	10.1	84.6	3.0	2.4	78.7	3.7	0.9	16.7
1-2 mile	4.8	81.0	3.8	10.4	21.2	3.5	2.7	72.6
2-3 mile	1.6	77.0	15.7	5.6	3.9	5.0	12.6	78.5

Table C.33 (contd....)

	S.S.C.	Durables R.C.	A's	B.C.D.
1 mile	33.9	58.6	5.0	2.5
1-2 mile	17.4	57.1	6.2	19.3
2-3 mile	4.7	58.9	17.6	18.8

SHOPPING SURVEY OF NORTH DURHAM

Please indicate the place LAST visited for each of the following items:-

Centre Visited

(a) Weekly Groceries

(b) Butcher's Meats

(c) Chemists

(d) Boots and Shoes

(e) Men's Clothing

(f) Women's Clothing

(g) Children's Clothing

(h) Television Set (or rental)

(i) Hardware and electrical goods - irons, cleaners etc.

(j) Jewellery - watches, rings etc.

(k) Major Furniture - e.g. Living room suite

(l) Kitchen Appliances - cooker, refrigerator, etc.

(m) Cycle or pram

(n) motor car

(o) Doctor

(p) Bank

(q) Cinema