

**THE URBAN 'GHETTO'***The Spatial Distribution of Ethnic Minorities*

## 24

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**0 Abstract**

This paper looks from an historical perspective at one of the issues currently on the public agenda: the perceived lack of social cohesion and physical integration between immigrant communities and their hosts. The modern malaise of segregation and isolation of minority groups is invariably blamed on the spatial polarisation prevalent in cities today. In order to establish the truth of this, the study described here chose to look at Jewish settlement in 19th century English urban centres to see whether its spatial form contributed to the perceived successful integration of Jews into English society. Ethnic clusters, especially those of marginal and immigrant groups such as the Jews, are typically associated with the term 'ghetto' and the negative meanings attached to it (such as seclusion). One of the principle aspects of this study was to enquire whether the examples of Jewish settlement had 'ghetto' characteristics.

This paper begins with a background to the concepts used, with a review of the history of the ghetto as a spatial form. The second section reviews the causes of minority and immigrant clustering through choice. The paper continues with a description of the methodology and the data used in the studies reviewed. Then the two studies are reviewed: first, a study by the author of 19th century Jewish settlement in London; and second a study by the author of 19th century Jewish and Irish settlement in Leeds. The paper ends with conclusions and a description of research currently being undertaken by the author.

**1 The History of the Ghetto**

The term 'ghetto' stems from the name of the walled community of the Jews of Venice. The location of Venice at a junction of trade routes had turned it into an international city, containing many minorities, including Germans, Greeks and Jews. In order to control the minorities, the Venetian authorities applied restrictive rules on their movement. This was taken to the extreme in the case of the Jews, who were placed under curfew within a walled, moated area. The ghetto system persisted in western Europe until the French revolution, whose ideas led to the emancipation of Jews in countries conquered by Napoleon. By then, the exclusion had led to severe deprivation and lack of progress. The ghetto system did not return until 1940, when the ghetto was re-instituted to segregate Jewish populations under German conquest, with indescribably harsher rules than in the Middle Ages. Nowadays the term is used to describe clusters of minority settlement, and is usually associated with segregation.

Some sources maintain that the Venice ghetto was an enforced enclosure (Wirth 1969, p. 18). Others (Sennett 1994, p. 215) suggest that the ghetto constituted a compromise between the economic contribution of the minority and the wish to

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## 24.2

exclude a perceived contaminating presence. For this reason, certain categories of Jews (such as merchants and prostitutes) were permitted to venture out of the ghetto, within certain times. Other sources (Hertzberg 1968) concur that the Jewish ghetto enabled social cohesion for the community due to its enforced concentration. This meant that a specifically Jewish identity could be maintained through reinforcement of religious practise. The walling in (or in later cases, the concentration) of the community also afforded protection from oppression and attack from the outside. Ultimately, ghettoisation in continental Europe led to self-government by the Jewish populations

### 2 Ghetts and Clusters

As well as describing enforced enclosure, the term 'ghetto' is also used to describe clustering by identifiable groups such as minorities or immigrants, especially clusters of Jews. For example, Wirth uses the term to describe Jewish settlement in England (Wirth 1969, p. 18), despite the fact that since resettlement in the 17th century, Jews have not suffered legal restrictions on settlement in this country.

The causes of clustering by choice of minority groups are normally assigned to exclusion caused by prejudice, or to blocks of property being retained for certain labour groups. In other cases, clustering by occupation is cited as a principle cause (Fishman 1988, pp 61; Hersch 1969, pp 515-516).

In the case of the Jews there is the added factor of religion, since they cluster in order to be close to a synagogue (which must be within walking distance) and to other religious functions, such as kosher butcher and Sunday school (Kalman 1980, pp 8). However, (albeit lesser degrees of) clustering due to religion can also be found amongst other groups such as the Welsh and the Greek Cypriots in London, who are tied to a specific church community (Drake 1994, pp 54 and 93).

Conventional interpretation of the term usually associates 'ghetto' with segregation of the identified cluster. Certain sources [e.g. (Carter 1983, pp 189-201) also point out that ghettoisation is a question of perception and not necessarily of fact. Lees, for instance notes that the Irish in London have never settled in a 'concentration that can be called a "ghetto"' (Lees 1969, pp 359-85) yet their clustering has been repeatedly remarked upon. Another notable factor of clustering is that this is not necessarily a behaviour restricted to immigrant groups and can be found amongst minority groups in general (Waterman 1989)

This review of the term 'ghetto' suggests that the common perception of the ghetto relates to two notions: clustering and segregation. The first can be defined by a visual or numeric estimation of the relative density of the minority to its surroundings. The second is defined by the degree in which the minority group is cut-off from its surroundings. It was decided to test these definitions on the following examples of minority settlement:

In the first instance a full-scale study was undertaken of Jewish settlement in London in the late 19th century. This settlement has been referred to as a ghetto in numerous accounts [e.g. Zangwill 1922). A comparative study was made with two



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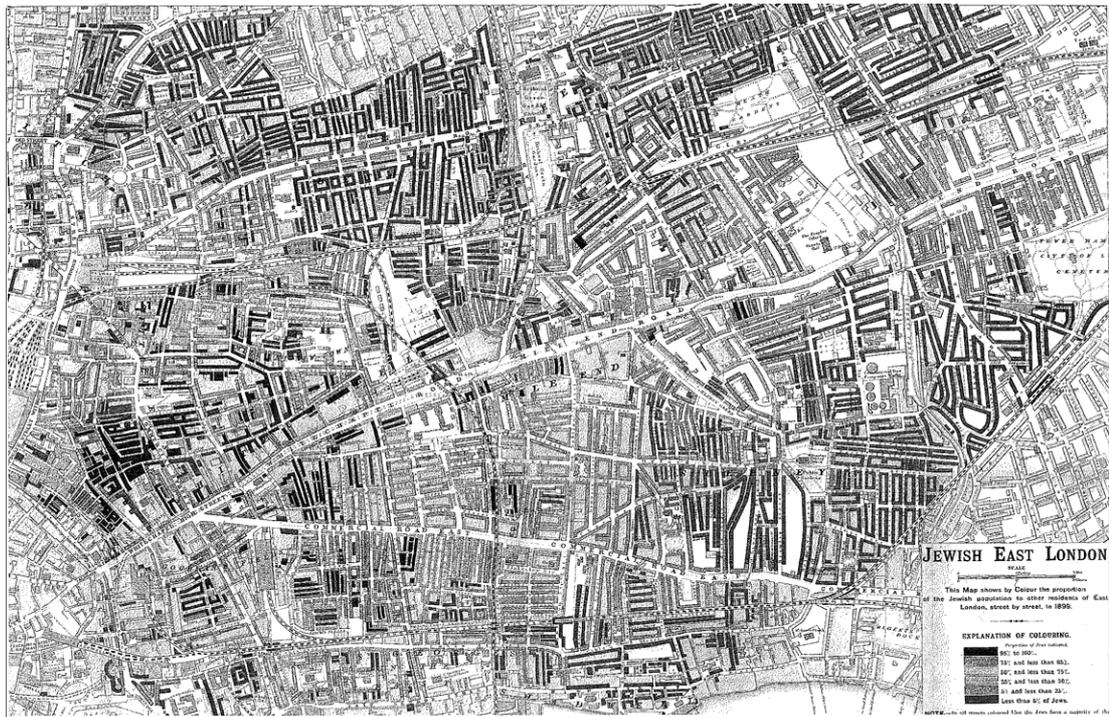


Plate 2. *Descriptive Map of London Poverty*, Booth, C. (1902) *Life and Labour of the People in London - Third Series: Religious Influences, Map H - Inner East London*, p. 110; London, Macmillan and Co. Ltd.

The available data on the Jews in Leeds were much more detailed; they were based on work by Murray Freedman, (Freedman 1994a, Freedman 1994b, Freedman 1992) who has extracted details of the full census record for each Jewish name in the 1851 and 1861 censuses and includes: name, status and gender (e.g. male Head of household; female lodger), age, occupation, country of origin and address. The census record also provided some understanding of the economic status of the Jews of Leeds. For the purpose of the analysis, only the main area of settlement was considered and, as in the London study, the (6 streets of) outlying settlement were disregarded.

The studies described here used 'Space Syntax' techniques that have been developed at the Bartlett School of Architecture, UCL. These techniques have been employed in research at the Bartlett (Hillier 1996), which has found that the pattern of space in cities works as a strong predictor of patterns of pedestrian movement and space use. The techniques (described below) were used in this study for two purposes. First, to objectify analysis of the spatial aspects of the area in question and second, as a control for analysing data relating to the Jewish population: relative density, economic data and the location of Jewish institutions. Space Syntax was also useful in that it permits analysis at the street level, which is the level of detail of the available data. Since one of the basic measures used in Space Syntax analysis are relative integration and segregation, use of this system of analysis enabled accurate measure of the degree of 'segregation' of the settlements in question.

The first stage of analysis was to create an axial map [analysed with a computer programme developed at the Bartlett (Dalton 1996) of the area in question within a larger contextual area. The larger area was determined in order to eliminate 'edge effect' (edge effects occur when the spatial characteristics of streets near the edge of a model seem segregated because they are cut off from their immediate surround-

ings). After visual examination of the axial maps, the results were exported into a statistical table. The table allowed compilation of the spatial characteristics, along with the 'ethnic' and economic characteristics, of each street in the system. The two studies are described below.

**4 Analysis: Jewish Settlement in London in the Late 19th Century**

The axial model for the study was made using an Ordnance Survey map (Bacon 1987). The boundary was determined by the geographical limits of the East End of London, placed in a larger contextual area. The results of the axial analysis can be seen in figs. 1 and 2, which show global and local integration. In each map the area of Jewish settlement has been outlined with a black dotted line. These graphs show that the Jewish area is contained in the most globally and locally integrated streets of the map (the darkest greys).

--- 'ethnic' area of settlement. 1891

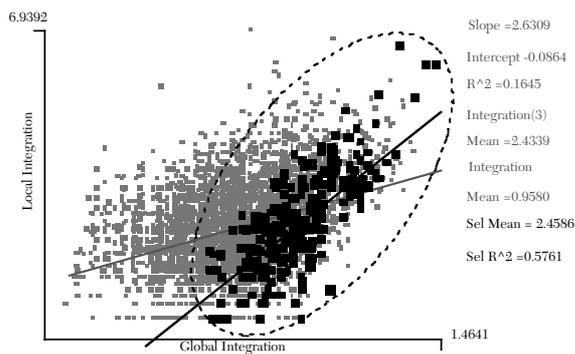


Figure 1. Global Integration - London 19th Century.

Figure 2. Local Integration - London 19th Century.

Figure 3. Intelligibility - Streets with 50% or More Jews Highlighted

Initial analysis of the spatial attributes of the area can be seen in figure 3, which shows the scattergram of intelligibility - the correlation between global and local variables. The Jewish area of majority settlement (over 50% density) is marked with black dots on the scattergram; with a separate line of regression, which shows strong 'intelligibility'.

*4.1 Spatial and ethnic analysis*

The results of the spatial analysis were exported into a statistical table. The spatial data were then used for comparison to data extracted from Arkell's map of Jewish London.

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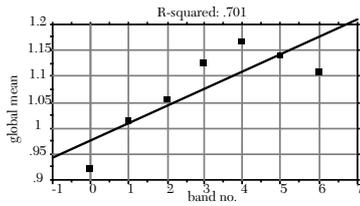


Figure 4a. Correlation Between Jewish Density and Global Integration

Figure 4b. Correlation Between Jewish Density and Local Integration

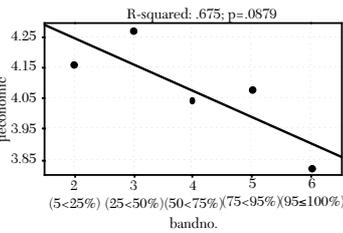


Figure 5 Univariate Plot of Jewish and East End Percentages

The data on Jewish settlement was translated into numeric form by taking each band of density (0-5%, 5-25%, 25-50%, 50-75%, 75-95%, 95-100%) and coding it into 6 bands from 1 to 6, respectively. The streets with no Jews were coded 0.

The first results were found by conducting t-tests comparing spatial values for the Jewish area with the average spatial values of the model as a whole. The t-tests had highly significant results ( $p=.0001$ ), suggesting that the Jewish streets were on average more integrated, both locally and globally, than the East End as a whole.

The relationship between spatial and ethnic density factors was also examined in the form of correlation analysis, in which each of the ethnic bands was plotted against the average spatial values for each band. Figures 4a and b show the scattergrams of global and local integration means set against band numbers. The scattergrams suggest that the greater the density of Jews to population, the greater the mean integration value. Unlike the case of global integration ( $p=.0187$ ), the scattergram for local integration (4b) is not statistically significant.

There is another interesting finding which is repeated in both scattergrams, where the upper two bands of ethnic density decrease in integration values. This suggests a bifurcation between the lower five groups of ethnic density, which become more integrated, the denser they become; and the upper two bands, which become less integrated, the denser they become. This finding is stronger for local integration. In other words, the top-most bands are relatively segregated from their less densely occupied neighbours.

4.2 Spatial and economic analysis

Similar to the data on Jewish density, the data on economic classes in the Booth map were assigned by coding Class A streets (the sub-poverty class) as 1; Class B as 2; and so on to class G (middle class), the highest class in the area.

The percentage of Jewish population in each class was calculated and then plotted against the percentage of all East End population in each class [the latter was taken from (Booth 1969), vol. 1, pp. 34-36].

The results of the plot can be seen in figure 5. We see in the graph the classes grouped into poverty and middle classes (after Booth). This plot suggests that the top class in each group (C and G) has a larger proportion of Jews than in the East End as a whole. The counterpart to this finding is that there are relatively smaller proportions of Jewish streets that belong to the lowest classes of each group (A, B and D-E).

In order to see if there was an economic cause to the bifurcation between ethnic density and spatial variables, described above, the mean economic values for each band were plotted against the band numbers. The result of this plot (figure 6), is a reverse correspondence between the two values (if  $0 \leq 5\%$  excluded - the majority of streets in this band are geographically distanced from the settlement core). The result is marginally insignificant ( $p=.0879$ ). In other words, the greater the density of Jewish settlement, the lower the economic class of the street, on average. This suggests that there may be a link between poverty and ethnic density.

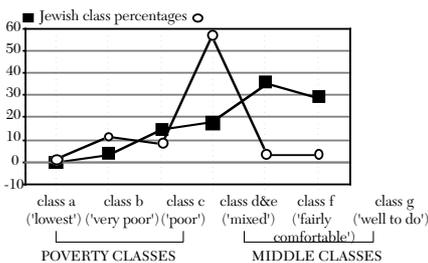


Figure 6 Correlation Between Jewish Density and Mean Economic Class



4.3 Spatial and institution analysis

In addition to the ‘ethnic’ and economic data available in both studies, the London study also utilised data on the location of Jewish institutions, in order to attempt a more detailed description of the characteristics of the settlement. Several sources were used for ascertaining the location of Jewish institutions, amongst which the following: (Newman 1980, Glasman 1982, Levy 1948) . Figure 7, which overlays institution categories on the map of local integration, shows that the majority of institutions are located in the western side of the area (which has greater integration values) and also that the main streets of the area do not contain institutions at all.

In order to check if these findings had statistical significance, the frequency distribution of global and local integration values for each institution type were plotted in a bar chart (figure 8). In this diagram, which shows the mean values for each category of institution, we see that the global integration values are almost undifferentiated amongst the various categories, whilst the local integration values are highly differentiated as well as being above the (dotted) line of mean integration for the model as a whole. This suggests that Jewish institutions tended to conform to the local pattern of space but not to the global.

The group of religious institutions could also be divided into two - the synagogues and institutions that belong to established movements such as the ‘United Synagogue’ and the minor synagogues (*steibels*), which were set up by the local population (Newman 1980, Alderman 1987, Kohn 1973) . Figure 9 shows the result of a plot of frequency distribution of spatial values for religious institutions alone. This plot shows that the integration values for major religious institutions are much lower than those for the minor institutions; almost close to the mean for all streets (marked with dotted line) and therefore it may be suggested that they do not occupy a significant position in the local pattern of space. This result points to the fact that the major institutions were either in existence before the Jewish settlement spread to this area, or that they belonged to organisations which had a larger geographical base.

Figure 7. London East End Jewish Institutions - Overlaid on Map of Local Integration

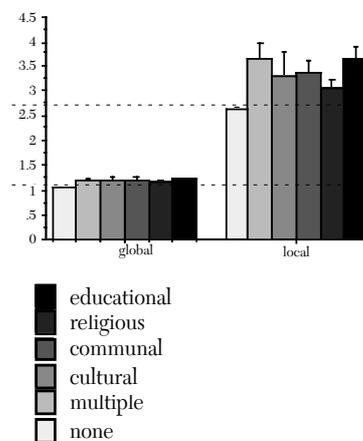


Figure 8. Mean Integration Values Bar Chart, Split by Institution Type

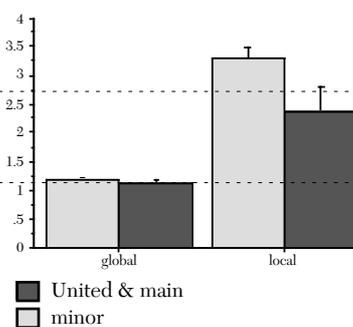


Figure 9. Mean Integration Values Bar Chart, Split by Main/Minor Institution Types

**5 Analysis: Jewish and Irish Settlement in Leeds in the Mid-19th Century**

As with the London study, Space Syntax analysis was used to model the area of settlement by the two immigrant groups in a larger context. The boundary was determined by the limits of the built-up area. The axial map was drawn from Ordnance Survey maps at 25" [e.g. (Dickinson 1908) and original sets of the 1847 1:10,000 maps (British Library)]. The results of the axial analysis can be seen in figs. 10 and 11, which show global and local integration. In each map the areas of Irish and Jewish settlement have been outlined with a black dotted line; the lighter grey highlights the 1851 settlement and the darker, the larger area of 1861 settlement. On the left of the maps, each period of settlement is divided into the Irish and Jewish areas. Figures 10 and 11 show that the area of 'ethnic' settlement is located in the most globally integrated area (the darkest lines), although only the Jewish area of settlement is located in the locally integrated area. We also see that all 'ethnic' settlement is north of the River Aire (marked in grey highlighted outline) and the majority is also north of the railway lines (marked in dash-dot lines).

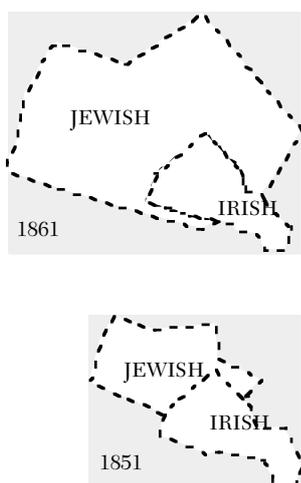


Figure 10. Global Integration - Leeds 19th Century

- 'ethnic' area of settlement 1851
- 'ethnic' area of settlement 1861



Figure 11. Local Integration - Leeds 19th Century

Figure 12 shows the scattergram of ‘intelligibility’ for the Leeds model. This is repeated four times in order to show the principle clusters of Irish and Jewish streets in 1851 and 1861, in turn. These clusters are marked on the scatters with black dots and a separate line of regression. It is evident from these graphs that there is a distinct difference between the Irish and Jewish groups of streets; whereas the former do not conform to a specific spatial pattern, the latter, especially in the 1861 census, have a reasonable correlation between global and local values. This intelligibility of Jewish settlement is notable in that it repeats the findings for the London study.

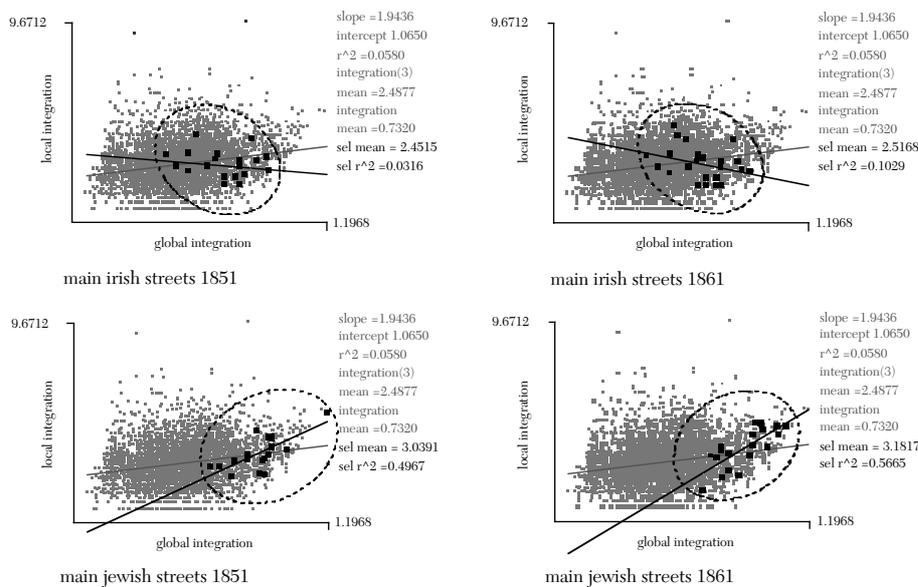


Figure 12. Intelligibility - Streets Within Main Cluster Highlighted

### 5.1 Spatial and ethnic analysis

The results of the spatial analysis were exported into a statistical table. The available data on the settlement of the Irish and the Jews were then applied to the table, in the following manner:

The data on ethnic density in Leeds were compiled in a similar manner to that in the London study: each street in which Jews or Irish lived was checked in the original census records of 1851 and 1861 at the London Record Office in order to see how many occupied houses there were in total. The number of Jewish or Irish houses was then entered into the table of spatial values. Then the percentage of ‘ethnic’ houses to non-ethnic houses per street was calculated. In order to compare the Leeds study with the London study, the streets were also categorised by the bands that were used in the latter study (0<5% etc.).

T-tests comparing mean global values for Irish and Jewish streets as separate groups with mean global for the model as a whole showed results of  $p = .0001$  for Jewish and Irish streets in both censuses. The mean Jewish and Irish values for local integration were found to not be significantly different from the model as a whole, except in the case of Jewish streets in 1861 ( $p = .0316$ ). Further t-tests were made to compare Irish and Jewish global integration values within the same census. The results suggested that the Jewish streets were significantly more integrated than the Irish streets, especially in the 1861 model ( $p = .0291$ , 1851 and  $.0001$ , 1861). These findings suggest that the Jewish streets repeat the findings for the London study, whilst the Irish streets do not.

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Other spatial differences were found when comparing the average Jewish and Irish street lengths (measured in pixels on the axial map) with the average for the model as a whole. T-tests of this measure suggested that the Irish tend to occupy average length streets, whilst the Jews occupied significantly ( $p=.0428$ ) longer streets than the model as a whole.

As mentioned above, the Leeds study attempted to duplicate the methods of the London study by categorising the 'ethnic' densities into the same bands as the London study. However, since in the Leeds study, the Jewish and Irish densities were not evenly spread (the average Jewish density was only 11% in 1861, compared with 77% for the Irish), the two groups were compiled together for the scattergrams of spatial and ethnic density. These brought quite different results than the London study, with strong reverse correlation between spatial measures and relative density, especially for global integration (see figures 13a and b). This finding was repeated for the 1861 census, where the correspondence was slightly improved.

In order to see if there was an economic influence on the pattern of settlement, this aspect was also studied, as will be seen in the next section.

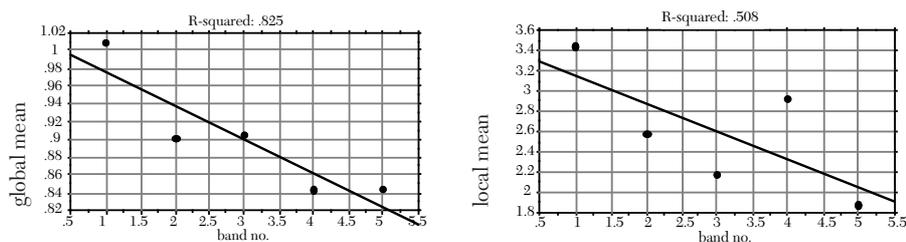


Figure 13a. Correlation between 'Ethnic' Density and Global Integration.

Figure 13b. Correlation between 'Ethnic' Density and Local Integration.

5.2 Spatial and economic analysis

Despite the lack of independent data on economic standing, it was decided to attempt to measure economic status through the available census data. The results shown here are for the 1851 study only.

First the household size was considered; Jewish household size was determined by counting the number of household members in Jewish households and averaging out Jewish household size per street. Also, the average household size for all houses in 'Jewish' streets was determined by counting household members in the original census records and averaging as before. In addition to this the average household size for all streets in the sample was calculated (see first set in table below). In order to eliminate bias due to the fact that the lists of Jewish households did not show non-Jewish members, streets which were considered Jewish, but contained only gentile households with Jewish lodgers (and no Jews living independently) were omitted. These figures are given below the first set. There was no available data on Irish household size.

T-tests were made to compare the average household size in 'Jewish' streets with the average household size in Jewish houses, omitting 'Jewish' streets with sole lodgers. Jewish households were found to be significantly smaller than average ( $t=-2.501$ ,  $p=.0254$ ).

<i>mean household size Jewish</i>	3.664
<i>mean household size for total population (in streets occupied by Jews)</i>	5.37
<i>mean household size for total population</i>	5.733
<i>mean household size Jewish, excluding Jewish streets which have only Jewish lodgers in gentile houses</i>	4.219
<i>mean household size for total population (in streets occupied by Jews), excluding Jewish streets which have only Jewish lodgers in gentile houses</i>	5.606
<i>mean <math>\mu</math> servants-lodgers for all streets in the sample (Jewish and Irish)</i>	-.948
<i>mean <math>\mu</math> servants-lodgers for all Irish streets</i>	-1.647
<i>mean <math>\mu</math> servants-lodgers for all Jewish streets</i>	.521

24.11

The second determinate of economic levels was arrived at by counting the number of servants and lodgers (listed in the census under ‘relationship to head of family’) in each household and averaging for the street. Despite the fact that possible confusion in the interpretation of these relationship categories has been noted by scholars of census data (Higgs 1996) p. 76], it was decided that analysis of the data on servants and lodgers in aggregated form might be suggestive of economic status. Since servants might be present in most classes of household, a formula was arrived upon whereby the number of lodgers was deducted from the number of servants in each single household (in many cases leading to a negative number). The results were then averaged per street, see bottom of table above, listing the values as {mean [servants minus lodgers]}. The theory behind this was that a higher proportion of servants to lodgers might indicate higher economic status - and the reverse. It should be noted that Booth arrived at his classifications of social class in London by calculating the number of persons per occupied rooms and the proportion of people to servants (Booth 1902), p. 114] - since the former information was not available, the above formula was used instead.

Table 1. Summary of household Jewish data from 1851 Census.

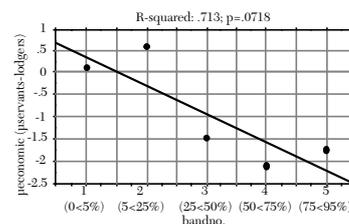


Figure 14. Correlation Between ‘Ethnic’ Density and Mean Economic Class.

T-tests were made to compare mean values for Jewish streets with all streets in the sample and the same for Irish streets (see bottom of table above). It was found that the Jewish streets were significantly higher in this measure of economic value than the sample as a whole ( $t=4.324$ ,  $p=.0004$ ), whilst Irish streets, were significantly lower in economic value than the sample as a whole ( $t=-2.762$ ,  $p=.0086$ ).

In order to replicate the London study, the mean economic values for each band of {mean [servants minus lodgers]} were plotted against the band numbers of ‘ethnic’ density. The result of this plot (figure 14) is a reverse correspondence between the two measures (marginally insignificant:  $p=.0718$ ). This finding repeats that for the London study, where the greater the ethnic density, the lower the economic rating. This finding is not surprising considering that the lower densities are mainly Jewish streets, which have higher economic values, on average.

## 6 Discussion of Results and Conclusions

The results of this study suggest that Jewish settlement in the 19th century was clustered, but not segregated; both settlements were shown to be located in highly integrated areas of the city. Irish settlement was also clustered in the integration core, but unlike the Jewish settlements, it was not locally integrated, nor was its degree of integration as high as the Jewish settlement with which it was compared.

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The Jewish settlements were found to be in well connected, 'intelligible' parts of the city system. Past research at the Bartlett has suggested that a strong correspondence between local and global spatial structures (i.e. strong intelligibility) leads to good distribution of movement along the main routes of movement, which brings the global movement into contact with the movement in the more segregated spaces of the city. Since the deepest parts of the Jewish settlements were found to be directly connected with the outside, it was possible to conclude that the supposed depths of the 'ghetto' were part of the general movement network of the city. Therefore, except for the most segregated streets of the system, the local community was brought into daily contact with people moving through the main network of the city.

In Hillier's theory of the 'two-step logic' (Hillier and Penn 1993), p. 35] he suggests that in the (intelligible) traditional city, the local structure of space is only one or two steps away from the global structure of space. This allows for a subtle relationship between the 'inhabitants and strangers of the city, who mainly encounter each other in the global structure of space, whilst the interstices of the local structure of space are reserved for the inhabitants, although the inhabitants are never fully cut-off from their surroundings.

The London study also noted another characteristic, that there were higher proportions of Jews in the top economic classes of each band. It is possible to conclude from this, that relatively small numbers of Jews moved out of the area, despite their attainment of economic mobility. This could be caused by the social aspects of the Jewish community, or could be associated with the need to stay close to places of work, as described in the section on the causes of clustering. The economic analyses suggested that the Jews were distinctive from their surroundings, in their relative higher economic status in both Leeds and London. They also suggested a correlation between economic class and integration.

These results suggest a more complex definition of 'ghetto' than first envisaged. If we consider how the Irish settlement differed from the Jewish; it was globally integrated but not locally integrated, nor was it found to be intelligible; It was also not economically distinguishable from its surroundings. On the other hand, Jewish settlement was found to be highly integrated, both globally and locally and had greater than average economic achievement; Jewish settlement was also found to be forming a sub-area of high 'intelligibility', both in the case of close to 300 streets in London and in some 30 streets in Leeds (see fig. 3 and 12, respectively). Taking these results together, a tentative supposition may be that it is the intelligibility of the Jewish settlement, and not simply its lack of segregation, which distinguishes it from other cluster settlements.

Moreover, the intelligibility of Jewish settlement might be the factor that enables its higher economic success, since it allows the Jews to maintain high levels of contact with the host society and allows them access to the markets (which tend to be located on the main integrators, according to (Hillier and Penn, 1993)]. Indeed, considering the importance of proximity to the commercial district for the Jewish businesses and occupations, it seems likely that the main streets were their principle points of transaction with the host community. The counterpart to this theory is that the relative lack of economic success of the Irish in Leeds was due to their lack of intelligibility.

In other words it seems that the choice of location in certain, distinctive streets of the city system (see for instance how the Jews overwhelmingly populate relatively long streets), may lead to the potential for high levels of encounters with the host society and with its market-place. In addition to this, we find that the institution analysis (in London only) suggested that Jewish settlement is also distinguished by the fact that its cultural institutions restrict themselves to the one-step-off local integrators. This stepping back of internal relations seems to afford greater privacy for the meeting-point between the Jews with themselves. It may be that this result completes the picture of Jewish settlement, so that we have external relations being enabled by high intelligibility whilst internal relations are restricted to the interstices of the settlement. It may be concluded that this duality of relations is the factor that contributed to the perceived success of Jewish settlement in England.

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In order to test this contention further, other examples of Jewish settlement in Leeds, Manchester and London currently being investigated in a doctoral study (an EPSRC funded MPhil/PhD at University College London, by the author) will also consider the location of business addresses and the location of various categories of occupation in order to see whether there is a link between intelligibility and economic distribution in space.

#### Reference

- Alderman, G. (1987) *The Federation of Synagogues, 1887-1987* London, Federation of Synagogues.
- Bacon, G. W. (1987) *The A to Z of Victorian London (with intro. notes by Ralph Hyde)* Kent & London, Harry Margary, Lympne Castle in assoc. Guildhall Library London.
- Booth, C. (1902) *Life and Labour of the People in London*, London, Macmillan.
- Booth, C. (1969) *Life and Labour of the People in London* New York, A.M. Kelley.
- Carter, H. (1983) *An Introduction to Urban Historical Geography* U.S.A., Edward Arnold.
- Carter, H. and Lewis, C. R. (1991) *An Urban Geography of England and Wales in the Nineteenth Century* London, Arnold.
- Dalton, N. (1996) *Axman PPC 2.2 (computer programme)*, London, Unit for Architectural Studies, University College London, beta-test version, for Axial Analysis.
- Dickinson, G. (Ed.) (1908) *Old Ordnance Survey Maps of West Yorkshire: Central Leeds: scale 25"*; Ordnance Survey Sheet no. 218.02, Gateshead, Alan Godfrey Maps.
- Dillon, T. (1973) 'The Irish in Leeds 1851-1861' *Thoresby Society Publications* 54 (part 1, no. 119): 1-28.
- Drake, M., (Ed.) (1994) *Time, Family and Community: perspectives on family and community history* Studying Family and Community History: 19th and 20th Centuries, Oxford, Blackwell in assoc. Open University.
- Fishman, W. J. (1988) *East End 1888: a year in a London borough among the labouring poor* London, Gerald Duckworth & Co. Ltd.
- Freedman, M. (1992) *Leeds Jewry: The First Hundred Years* Leeds, Murray Freedman/The Jewish Historical Society of England, Leeds.
- Freedman, M. (1994) *Census List of Leeds Jewish Residents: 1851 (extracted and computed)*, Leeds, (Unpublished), Lotus 123; 142 rows.
- Freedman, M. (1994) *Census List of Leeds Jewish Residents: 1861 (extracted and computed)*, Leeds, (Unpublished), Lotus 123; 224 rows.
- Glasman, J. (1982) *London Synagogues and the Jewish Community, c. 1870-1900*, MSc. Thesis, Bartlett School of Architecture, University College London.
- Hersch, L. (1969) 'International Migration of the Jews' in *International Migrations* Ed. W. F. Willcox. London, Gordon and Breach (reprint of 1931 edition), 471-520.
- Hertzberg, A. (1968) *The French Enlightenment and the Jews* New York, Columbia University Press.
- Higgs, E. (1996) *A Clearer Sense of the Census: the Victorian censuses and historical research* London, HMSO.
- Hillier, B. (1996) *Space is the Machine: a configurational theory of architecture* Cambridge, Cambridge University Press.
- Hillier, B., Penn, A., Hanson, J., et al (1993) 'Natural Movement' *Environment & Planning* 20 (B) : 29-66.

- Kalman, R. (1980). *The Jewish East End - where was it?* Ed. A. Newman. The Jewish East-End 1840-1939: proceedings of the conference held on 22 October 1980 jointly by the Jewish Historical Society of England and the Jewish East End Project of the Association for Jewish Youth, London, The Jewish Historical Society of England.
- Kohn, J. (1973) *The Synagogue in Jewish Life* New York, Ktav Inc.
- Lees, L. H. (1969) 'Patterns of Lower-class Life: Irish slum communities in nineteenth-century London' in *Nineteenth Century Cities: essays in the New Urban History* Eds. S. Thernstrom and R. Sennett. New Haven, Yale UP, 359-85.
- Levy, A. B. (1948) *East End Story* London, The Jewish Chronicle.
- Newman, A. (1980). *The Synagogues of the East End*. Ed. A. Newman. The Jewish East-End 1840-1939: proceedings of the conference held on 22 October 1980 jointly by the Jewish Historical Society of England and the Jewish East End Project of the Association for Jewish Youth, London, The Jewish Historical Society of England.
- Roth, C. (1967) *A Short History of the Jewish People* New York, East and West Library.
- Russell, C. and Lewis, H. S. (1900) *The Jew in London; with a map specially made for this volume by Geo. E. Arkell* London, Fisher Unwin.
- Sennett, R. (1994) *Flesh and Stone - the body and the City in Western Civilization* New York, W.W. Norton and Company.
- Vaughan, L. (1994) *The Jews in London 1695 & 1895*, MSc. Thesis, Bartlett Graduate School, University College London (Unpublished).
- Waterman, S. (1989) *Jews in an Outer London Borough, Barnet* Queen Mary College, London,
- Wirth, L. (1969) *The Ghetto* Chicago and London, University of Chicago Press.
- Zangwill, I. (1922) *Children of the Ghetto: a study of a peculiar people (originally published in 1892)* London, Heinemann.