

CLASSIFYING HISTORICAL OCCUPATIONS

into economic sectors:

PROBLEMS AND POTENTIAL

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Written by PJC to accompany
London Historical Database (LED)
and documented in
Edmund M. Green, Penelope J. Corfield and Charles Harvey,
Elections in Metropolitan London, 1700-1850:
Vol. 1 - Arguments and Evidence (Bristol Academic Press, 2013),
Vol. 1, pp. 415-40: section 7.11.¹

Two companion pieces by PJC are:
Pdf35 ‘Lords and Ladies: Titles, Status and Precedence’
and Pdf36 ‘Classifying Historical Occupations by Social Class:
Uncertainties about Status within Occupations
and about the Number of Classes’

See also PJC website Pdf30 for *Overview of LEH Website*;
and PJC website Pdf34 for *Summary: Proto-Democracy in C18 London*.

This essay considers the general issues raised by classifying historical occupations; and then offers a new multi-level coding system, to indicate economic sectors. In detail, the following sections cover (1) general issues; (2) problems in attempting to classify occupations into broad economic fields; (3) common classifications proposed for pre-industrial economies and problems arising; (4) the Booth/Armstrong classification for occupations in industrial economies – and the enriched four-tier version, indicating economic sectors; and (5) concluding comments on individual occupational attributions.

1: General issues in classifying occupations

Assessment of the meaning of occupations in past societies requires much care; and once a formal system of classification is introduced the difficulties are multiplied. The challenge comes from the fact that economic and social labels are often fluid and mutable, and thus not readily standardised. Historians therefore have to recognise, and sometimes to trample over, subtleties when using this material.

Yet such a procedure is unavoidable for many purposes. It is not possible, when writing about mass societies, to proceed by summing up the experience of individual after individual. Some generalising and aggregative concepts are unavoidable. And, even when writing about only one person, it rarely proves possible to proceed without making some broader specifications about the social or economic milieu in which the chosen subject for study operated.

It is thus not so much the unavoidability of generalisation that is at issue but rather the question of how to do it well. Data from the past should not be confined into analytical categories that are either too rigid or simply anachronistic. Wherever possible, concepts and classifications should be fitting and adapted to the society and economy that they purport to illuminate, although there are difficulties in making such systems work when interpreting data over long periods of time when the general frameworks are often themselves subject to change.

Interpreting historical occupations poses a number of specific problems too. Often the historian has nothing more than a simple work label, without any further information about the sort of economic activities that were actually carried out by a given individual. Some of these occupational titles ('shopkeeper'; 'labourer') remain very generalised and imprecise. Moreover, it was not unknown for people to vary their self-description on different occasions and in different circumstances.²

Especially among the very poor, an 'economy of makeshift' encouraged individuals to turn their hand to whatever passing economic opportunities were available.³ Women, especially those combining work with time-consuming childcare responsibilities, were particularly likely to make a living by such haphazard means.⁴ Indeed, it is widely acknowledged that the large amounts of casual work undertaken by female⁵ and child labour⁶ in past societies often went unrecorded or under-recorded. This problem remains perennial.

Another omission from the formal record relates to many forms of seasonal employment. Such complexities were rarely mentioned when people were asked to describe their working role.

Equally, illicit or semi-legal economic activities are also absent from the record of occupations. Thus no burglars, no smugglers, no receivers of stolen goods, no pimps, no prostitutes, no confidence tricksters appear in official listings, even though legal evidence confirms that numerous people did indeed make a living from such roles.⁷ Only very rarely do illicit and semi-licit avocations appear and then generally when occupations were attributed to individuals by others. When people were asked publicly to state their main

business for a census or local survey, they did not view it as an invitation to explain the full details of how they scraped a living. Nor was that expected.

‘Occupations’ are then the public and summary face of the daily labour to survive; and it is as such that they have their immense value for historians. How people’s occupational designations appear and change allows for a schematic overview of the world of acknowledged work. On that basis, comparisons can be made between different towns, regions and countries; and over time. However, to make comparisons effectively, the data need to be organised and classified systematically. And here another set of challenges arises.

Occupational designations do not ‘map’ straightforwardly onto neat social classes; nor do they fall simply into separate sectors of the economy. It is tempting to assume that individual-level data from history must fit unproblematically into wider general categories of analysis. But there is no reason why they should automatically do so. Generic or generalising concepts in social and economic history have validity for their capacity to make a general summary, while individual case histories are liable to show much more variation.

Thus, in terms of social class, one named occupational label may be used by people with a range of differing personal circumstances in terms of wealth and social status. A ‘weaver’, for example, might be anything from a great master weaver, employing many out-workers, to a very poor journeyman, scraping a living by working for others. This point is discussed more fully in PJC’s paired essay on social classifications. [See PDF..] Put simply, it means that it is erroneous to assume that a person’s social class can be derived from his or her occupational designation alone.

Economic classifications also pose problems. For example, the ‘distributive’ sector of an economy can helpfully be distinguished from the ‘manufacturing’ sector for analytical purposes. Yet many individuals worked in occupations that crossed the sectoral boundary between the two. Many small artisans in history have sold as well as made their wares. A well known example is the case of the ‘hatter’, which was discussed in 1886 by the census enumerators. In normal English usage that term might apply to someone who was either a maker or vendor of headgear, or, of course, to one who was both.⁸⁹

Yet the fact that individuals freely and frequently were engaged in cross-over occupations that transgressed these notional boundaries does not preclude the economic analysis of the agricultural, manufacturing, and commercial/service sectors of an economy. It simply means that such data have to be used with care for such purposes.¹⁰

In sum, historians should approach the classification of surviving occupational data with a double caution. If not all problems can be eliminated, then at least the worst pitfalls

can be avoided. Hence both the apparent simplicity of occupational labels, and the apparent order of aggregative systems, need to be scrutinised with great care.

While classification is necessary, it does not follow that all classification systems are equally valid. Some do not do justice to the data and should be rejected. Indeed, since systems of taxonomy so crucially affect patterns of thought and analysis, it becomes all the more important to check that classifications are valid both conceptually and in practical application.

‘Let a thousand flowers bloom’ is likely to linger as the motto of socio-economic classifications systems. Since the past is so diverse, the ways of approaching and interpreting it are also likely to remain diverse. That will prevent research from stultifying.

Necessary pluralism should not, however, be allowed to stand as an excuse for sloppy treatment of historical data. As Kevin Schürer has noted, the requirements of aggregative analysis do not license researchers in history and the social sciences to forget the basic skills of scrupulous respect for the sources.¹¹ Thus rejection should still be the fate of all systems of classification that:

- involve more than very minor changes to the original data;
- cannot cater satisfactorily for all data within the set;
- do not provide scope for reclassification if required;
- have major internal inconsistencies;
- appear historically anachronistic; and
- produce bizarre (rather than unexpected) results.

2 Problems in classifying occupations for economic-field analysis

Classification for economic–sector analysis also raises a number of specific problems. The evidence, however, is valid and germane for this purpose. Occupational designations were, after all, indicators of an individual’s legitimate role in the work-place. The terminology was sometimes generalised and inexact but it had a meaning for contemporaries. It is the classification of such data that creates difficulties, and the problems are compounded when attempts are made at systematic international comparisons.¹² Despite many efforts, it has not proved possible to find a cross-national and cross-temporal occupational/economic classification that commands general agreement.

Strictly speaking, it should be noted too that listings of occupations were not listings of actual employment. There is generally no way of knowing whether individuals were currently active or unemployed. Nor do occupational labels automatically cover the entire

range of work that kept people busy. Some Norwich weavers, for instance, are known to have kept a small ale-house in a front room, probably aided by others in the household. Or a Birmingham nailer might simultaneously farm a small-holding, again assisted by others of his family. Such by-employments were a way of spreading risk in insecure times.

For historians, all information about multiple occupations is valuable and should be recorded wherever possible. However, it is apparent that these parallel activities were not always recorded. No doubt, it was partly for ease of communication that people became accustomed to summarising their main line of business under a single occupational designation; and, as work has become increasingly specialised, so social expectations continue to focus upon a single work label. It is not ideal, in the sense that there are always elements of economic activity that remain hidden from view. But historians habitually work with data as they are rather than as they might be.

Information that is taken directly from the person concerned, as in statements when witnessing legal documents or when voting publicly, is always to be preferred to information that is gleaned from third parties. Hence even census descriptions of occupations may be less than perfectly accurate, since one member of a household may have spoken on behalf of other co-residents.

Nonetheless, all publicly available information was at least subject to testing and revision, if need be. That applies, for example, to urban directories of the business and social elites.¹³ These listings of were compiled from a miscellany of sources; and the editors were prepared to correct information if objections were made. A systematic study of the directory data can yield serviceable information for historical analysis.¹⁴ Certainly, the genre was sufficiently useful to become in due course a standard resource for urban living. In the nineteenth century, some directories actually employed researchers to report information about occupation. The job was poorly paid, according to the testimony of one John Burn, who worked briefly as a data collector in mid-nineteenth-century Manchester and Guildford.¹⁵ Still, it indicated his editors' faith that such information was saleable enough to warrant making serious efforts at identification.

Among the issues raised by the occupational information that was collected by people like Burn is the question of whether the designated 'work' was the same or not in different places, let alone over time. It is difficult to discover precisely whether a 'hatter' in (say) Norwich carried out the same daily tasks as did a 'hatter' in (say) Shrewsbury or Manchester. However, the spread of a common work vocabulary and the gradual disappearance of separate dialect descriptions implies that in Britain, as in many other places, some common

ground had long been established. Regional economies were never completely isolated and, with time, became ever more closely integrated within national and international markets.

The standardisation of an occupational terminology became more marked from 1841 onwards, when the national census began collecting and summarising information about occupations. Many thousands of local terms were subsumed into broader categories. Indeed, after 1861 a regularly updated dictionary of terminology was issued to the clerks in the census office, so that they could systematise the great variety within their raw data.¹⁶

Again, this outcome implied that local and industrial variants were ultimately comprehensible within a national schema. Historians therefore have to follow suit and accept a degree of compatibility between regions. By the twentieth century, the new problem was becoming not so much the survival of regional terminology but the ever increasing subdivision of labour which continues to produce more and more specialist occupational labels in need of categorisation for easy understanding.

Having collected this information, there are then various exercises of interpretation that can be essayed. One useful procedure would be to examine hierarchies within the world of work. If the master could be differentiated from the apprentice, the mistress from the maid-servant, the capitalist 'manufacturer' from the 'hands', then the ratio of employers to employees would be identifiable.¹⁷ And in a few areas of work that can be attempted. Living-in servants were at least identified by the nomenclature of their service occupations, if these were given in any detail (rather than just described as 'servant').

Outside the household, however, it was relatively unusual, in Britain as elsewhere, for people to identify themselves in terms of status within work. Factory workers did not describe themselves as 'hands', nor did poor weavers, working on piecework or by the day, call themselves 'journeymen'. Indeed, people were not generally wont to embellish information about their jobs. It reflected a personal caution that caused the Victorian Superintendent of Statistics to grumble that the masses, who filled in their own census forms, were 'uneducated and suspicious of every question put to them'.¹⁸ Only from the mid-twentieth century has the British census attempted to collect information on both work and status within work.¹⁹

Before that date, however, economic hierarchy cannot readily be inferred from unvarnished occupational labels, except in certain specific work environments where full information is available.

More promising are the possibilities of analysing the different sectors of the economy. The nature of work can be identified much more readily than can the problematic

question of status within work. Even here, however, things still remain far from simple. As already noted, there are problems in selecting the sectoral groupings with which the available occupational information can be matched. These have to be flexible enough to allow for variations between one economy and another, as well as to permit a study of change over time. As a result of that perception, the search for one universal all-purpose coding of occupations has generally been abandoned by economic historians. An attempt at standardising Dutch and English data, for example, found the problems to be immense, with the additional consequence that incautious trans-national linkages multiplied the problems already inherent within each national coding.²⁰ A standard format that is true for all countries, all climes, and all eras, is neither desirable nor feasible.

Ideal in many ways would be a simple but clear taxonomy that allocated the workforce respectively into the primary or agricultural sector, alongside the secondary or manufacturing sector, and the tertiary sector of commerce and services. In addition, this last sector is now sometimes further sub-divided by economists into a separate quaternary sector of government and administration.

Such groupings certainly make conceptual sense. And as such they provide a valid tool for macro-economic analysis, as it is well established that in developing economies the percentage of the workforce in the primary sector tends to fall steeply. Moreover, change has not stopped there. In mature industrial economies within a globalised market system, the proportion of the workforce in the secondary sector is tending to contract too, with a consequent 'rise of the service sector', which may come to constitute as much as 75 per cent of the employed workforce.²¹ Such seismic shifts are clearly matters of great consequence, linked with the parallel shift from an agrarian to an urbanised society.

Practically, however, is it hard to align these broad categories of analysis with the historical record of specific occupational designations, especially in the case of pre-industrial economies which did not have a high degree of work specialisation. Individual workers' jobs often straddled the sectoral boundaries, as has already been noted. Not only could farming and commerce be linked, as when farmers and their wives took produce directly to market, but manufacturing and retailing activities were often carried out by the one and the same craftsman-retailer. Such combined roles had a perfect economic rationality and social acceptability. The economic sectors are discrete abstractions (and none the worse for that) while the workforce made its living partly within and partly athwart such abstract boundaries.

By classifying all 'makers' in manufacturing, therefore, historians can create an

apparent swing to manufacturing. Britain becomes the ‘workshop of the world’. Or, alternatively, by putting into retailing/service all occupations, which deal directly with the consumer, historians can equally generate a counter-swing to services and the tertiary sector. Britain becomes, equally plausibly, the ‘nation of shopkeepers’. Too stark a rubric for classification, one way or the other, can in effect skew the results.

These endemic difficulties are confirmed by E.A. Wrigley, who uses the 1841 and 1851 census returns to provide a model of the British economy subdivided into its primary, secondary and tertiary sectors. He confesses, however, that his allocation of occupations into these analytically but not practically discrete sectors is ‘highly arbitrary’.²²

Simpler and more direct, therefore, is a system that organises the data in terms of the type of products or service that they supply. This format constitutes an economic typology that reflects the field of work, avoiding questions about either employment status or economic-theory abstractions. As a system of classification, it is much less arbitrary than all others. It plays to the strengths of the occupational data as generated historically, since the type of product or service was what people tended to report. This classification is especially appropriate for processing information relating to economies that do not have a very marked degree of job specialisation. (Of course, if detailed break-downs of the nature of work survive, then more complex classifications become not only possible but desirable).

Examples of ‘product’ groupings are ‘food and drink’, ‘minerals’, ‘construction’ and ‘clothing’. The last of these sometimes includes textiles, if made for local consumption, while in the case of regions with substantial woollen industries catering for non-local markets ‘textiles’ can appear as a separate entry. Similarly, examples of ‘service’ groupings are ‘professions’, ‘services’ (often domestic), ‘finance’ and sometimes ‘merchants’. But again there is no standard format.

3 Common classifications for occupations in pre-industrial economies

Long before industrialisation, there were certainly jobs in industry and commerce, even in economies that were predominantly agricultural. And with the spread of towns and commercialisation, the range of employment opportunities expanded.²³ However, in these pre-industrial eras, the number of occupations tended to be relatively limited, in contrast with later times, and the specification of occupations tended to be comparatively simple.

With such data, historians do not need highly complicated taxonomies. Instead, a common solution is to use a relatively small number of broad-brush occupational categories. These are usually groups aggregating those who offered a similar type of product or service.

However, it often proved difficult to contrast one set of tabulated evidence with another, because different historians had chosen different or partly different broad groupings. Any element of diversity resulted in non-commensurate decisions in allocating occupations to one field of employment or another. Hence comparisons over time, and between different localities, became problematic.

Difficulties in classifications by type of product/service are further complicated when status designations and economic categories are mixed together, particularly when status designations are then used to create a class analysis.²⁴ It is possible to preselect within an urban population a 'middle' class (say, all the gentlemen plus the professions) while all others are put into a hierarchy of trades. Yet that exercise is highly misleading. At least some of the leading dealers and manufacturers, such as eminent grocers or master weavers, are likely to have been among the urban rulers as well. Indeed, some of great traders may well have been more affluent and powerful than (say) a minor professional man. It remains unwise therefore to try to make one classification serve simultaneously as an indicator of social status and of economic role.

Contrasting examples from two studies published in the 1980s highlight complexities both of classification and of comparability. The case-history in Table 89 column A relates to colonial America in the later seventeenth century.²⁵ As a prototype, it may be observed that it is rather thin on groupings, so that, for example, 'transport' and the 'professions' have entirely disappeared from view. Furthermore, 'clothing' and 'textiles' have been grouped together, which removes any chance of identifying the scale of textile production (that is also a problem in the schema in Table 89 column B). But, above all, the economic role of the 'gentlemen' is unidentified; and in practice this group might well have included some men who were large farmers, great merchants, or leading professionals, so overlapping with other groups. By contrast, a different arrangement of similar sorts of occupational data is shown in Table 89 column B, which relates to Newcastle upon Tyne in the same period.²⁶ This classification again does not differentiate the professions and transport from other service occupations; and, most bizarrely of all, it groups gentlemen, labourers and beggars into a 'miscellaneous' category that lacks either social or economic homogeneity.

Most notable of all, however, is the central problem of comparability between the two schema. There are differences in the classification of manufacturing occupations; and a complete contrast in the treatment of the 'gentleman', who appears at the head of the list in Column A but is grouped into 'miscellaneous' in column B. Indeed, that latter category can become sizeable in the classification of pre-industrial data, partly because some occupational

labels are indistinct – and because historians vary in their willingness to make arbitrary allocation, when making their classification.

Table 89 Two examples of socio-economic classifications for occupations in pre-industrial economies

Column A	Column B
Mixed status/product	Mixed sector/product
Gentleman	
Farmers	Agriculture
Food & drink	Food & drink
Metal & construction	Minerals/construction
Textiles & clothing	Textiles & clothing
Animal & vegetable products	
Services	Services incl. professions, commerce & transport
Labourers	Miscellaneous incl. gentlemen, labourers and beggars
Not stated	Not known

Sources:

Column A D. Galenson, *White servitude in colonial America: an economic analysis* (Cambridge, 1981), pp. 35-6.

Column B J. Ellis, 'A dynamic society: social relations in Newcastle upon Tyne, 1660-1760', in P. Clark (ed.), *The transformation of English provincial towns, 1660-1800* (1984), pp. 217-20.

Nonetheless, out of a prolonged process of trial and debate among historians, a set of commonly used groupings has emerged. These standardised categories, which are used in application to pre-industrial economies, are listed in Table 90. The groupings are by no means foolproof, as it can still remain very difficult to know where to allocate specific cases. And, of course, such categories are not mandatory, so that many variants remain in use.²⁷ But historians tend now to be more cautious before rushing in to invent their own systems *de novo*, thus adding to the difficulties of making meaningful comparisons.

Table 90 Common socio-economic classifications for occupations in pre-industrial economies

Leisured (landowners)

Professions

Food & drink/ Victualling

Household goods

Distributive trades

Clothing

Textiles

Leather

Building & furnishings (furnishings sometimes grouped with clothing)

Transport

Agriculture/ Rural labourers

This classification system, however, does not apply so well to occupations in or after the period of industrialisation in the eighteenth and nineteenth century, when the number of specialist occupational labels increases markedly.²⁸ However, the timing of the onset of structural economic change, summarised as the ‘Industrial Revolution’, remains debated.

For example, one recalculation of England’s occupational statistics c.1700, offered by Lindert,²⁹ was used by so-called ‘revisionist’ historians to challenge the conventional view that Britain’s structural economic transformation accelerated in the mid/late eighteenth century. In fact, Lindert had argued that later seventeenth-century England had already generated a relatively sizeable commercial and industrial sector, employing as much as 44 per cent of the employed workforce and leaving no more than 56 per cent in agriculture. Such calculations were flattering to the state of the economy by the later seventeenth century but implied the reverse for the one that followed.

Hence revisionist economic historians like Crafts downgraded England’s economic growth levels in the eighteenth century.³⁰ On the other hand, Lindert described his own conclusions as ‘*very tentative*’.³¹ His figures may have been unduly biased towards urban parishes.³² Since England and Wales in 1700 had an urban population comprising only 18.7 percent of the total population,³³ the commercial/industrial sectors seemed unduly inflated, even allowing for the contribution of rural industries. Hence many economic historians

firmly retained their analysis of fundamental change in the course of the eighteenth century – as restated, for example, by Ralph Allen.³⁴

The implications of these debates are that the outcomes of historians' socio-economic classifications may well have wider implications for overall historical interpretations. As already stressed, all models need to be scrutinised with care. Unexpected results must certainly not be rejected simply on the grounds that they conflict with prior orthodoxy. On the other hand, the more surprising the outcome of any classification system invented by the historian, the more rigorous the checks should be. In the case of Britain's pre-industrial economy, there are no impeccable data to resolve all issues without question. Hence the debates and the close inspection of data and methodologies show no sign of halting.

4 The Booth/Armstrong classification for occupations in industrial economies – and the enriched four-tier version

By the eighteenth century – and certainly by the nineteenth-century – the occupational data are both more plentiful and more specialised. They therefore lend themselves to much more intricate classification systems.

The most commonly used is a comprehensive framework which is known by the names of Charles Booth,³⁵ the nineteenth-century social statistician who devised it in 1886, and the historian W.A. Armstrong, who made later adaptations in 1972. This system too is imperfect. But it was based upon nineteenth-century knowledge of the occupational census, which was the major source of occupational information. And its prime focus is upon the nature of work, as defined by type of product or service involved. The data is grouped into major fields of employment as well as into sub-fields within each field. As a result, while Booth/Armstrong's general categories have some resonance with those earlier tabulated in Table 90, they permit a much greater breakdown within its broad categories, at ever-increasing levels of detail.

Nine major fields of employment are designated, each being divided into component activities - totalling over 80 sub-fields. Using this framework, Armstrong inserted a twofold coding for each occupation: one coding denotes the major field and one the sub-field.³⁶ The framework is an open one, in that new components can be added, or old ones removed or redesignated, should the need arise in the light of further research.

These nine main fields range across the spectrum of production, distribution and services. They are in turn: Agriculture/fishing; Mining; Building; Manufacturing; Transport; Dealing (retail and wholesale trade); Industrial Services (labourers; clerks); Domestic

service; and Public service/ professional.

Despite some weaknesses, this classification has a certain logic. It is focused centrally upon economic categories and it aggregates the data into different levels of specialisation. Indeed, a strong feature of the schema is that it takes into account simultaneously the type of product, the raw materials used (if applicable), and (as far as possible) the economic sector involved. On the strength of that, historians can then analyse the relative importance of the various fields and, when longitudinal data is available, can also identify shifts between the different fields over time.

Various ambiguities, however, still remain inherent in the Booth/Armstrong classification. One is the theoretical and practical problem that has already been discussed. It refers to the real-life overlap between 'manufacturing' and 'dealing'. When classifying occupations, both these general fields typically attract a large number of entries; and there is always a measure of judgement at the margins. In the case of the Booth/Armstrong system, there is at least a consistent rationale that carefully follows the nomenclature of the job designation. Thus all occupations specifically named as 'makers' are incorporated into manufacturing, which possibly gives the classification a slight bias towards 'manufacturing'. For example, 'hat-makers' and 'hat-cutters' appear as manufacturers, while the famous 'hatters' come under distribution. And so on. A 'baker' is assumed to be a bread-maker and is thus a manufacturer, while the proprietor of a 'pastry-cake shop' is obviously a dealer.

Without evidence of actual working practices, it is not possible to go any further. Thus a handful of occupations on the dealing/manufacturing boundary may be wrongly classified; but in such cases (as for example watch-making) it is likely that the balance of 'making' and 'dealing' varied from individual to individual, and even for each individual varied over time.

But decisions have to be made, which others can amend, in the event of disagreement. Overall, the aggregate picture provides a credible way of structuring the available data on occupations, and the classification system avoids the greater error of 'lumping' all dealers and makers together indiscriminately.

Two test cases using the Booth/Armstrong classification in application to the 1861 census offer contrasting results that reflect two very different urban economies. The borough of Bath, the great resort, contained many 'makers', with one quarter of all women with occupations there being dress-makers, while it also had numerous 'dealers' and professional men, and a huge contingent of female servants (three-fifths of all women with occupations). Meanwhile, Sheffield as England's premier steel town contained a male workforce of whom

fully 64 per cent were engaged in manufacturing (half of all men with occupations being metal-workers), creating a field of employment that numerically overwhelmed the ‘dealers’ and professionals. Even among women the picture confirmed the massive importance of steel-making. Thus while over two-fifths of Sheffield working women in 1861 were engaged in the traditional female sphere of domestic service, almost as great a proportion of women with stated occupations were engaged in manufacturing.³⁷

These dramatically divergent pictures confirm the capacity of a study of the Booth/Armstrong classification to provide a meaningful overall perspective. Interestingly, too, a different analysis of Sheffield occupations in 1787, also using the Booth/Armstrong classification, has found a similarly high concentration in steel-manufacturing. The town’s business leaders, as reported in an early town directory, also revealed that over half of them (53.9 per cent) were engaged in the manufacturing industries.³⁸ That two different sources broadly agree is not proof in itself of their separate or collective validity. But their mutual corroboration makes a strong case, which also fits with contemporary reports.³⁹

Unfortunately, in terms of the Booth/Armstrong classification as a whole, it must be admitted that one of the general fields within the classification is pretty much of a hybrid: this is the employment field named as ‘industrial service’. It incorporates not only bankers and financiers but also general labourers and porters. Such a melange of occupations can hardly be said to have great economic coherence. The grouping of labourers with bankers seems to strain the definition, while the classification sunders ‘labourers’ from ‘brickmakers’ labourers’, who appear separately within the field of ‘building’. However, this hybrid field is generally retained by historians for comparability, recalling that Booth intended ‘industrial service’ to indicate occupations that sustain the public economy of trade and industry as a counterpart to ‘domestic service’ sustaining the private economy of the household.

Meanwhile, there is one great omission within the Booth/Armstrong classification that related to the question of where to locate ‘gentlemen’ and others identified only by status labels. These designations covered a multitude of sins and virtues.⁴⁰ But their specification in terms of social ranking provides no guide as to their economic role.

An enrichment of Booth/Armstrong has accordingly been adopted. That adds a new economic, rather than social, field, listing the titled population under the heading of RE for ‘rentier’, indicating someone who lived on unearned income, whether from property or stocks and shares. Again, this is not a perfect solution, since there is no guarantee that all those with status designations were living off unearned as opposed to earned income. Such an additional field does, however, allow a separate assessment of the size of the titled

population, who otherwise would be left unclassified or merely grouped into miscellaneous. Interestingly, moreover, this amendment reverts to a category of classification originally inserted by Booth (known as ‘property-owning/independent’) but subsequently suppressed by Armstrong.⁴¹ Expanded in that way, the classification contains 10 major fields, as shown in Table 91.

Table 91 Major occupational fields within the enriched Booth/Armstrong classification

Code	Major occupational fields
AG	Agriculture/ fishing
MI	Mining
BU	Building
MF	Manufacturing
TR	Transport
DE	Dealing
IS	Industrial service
DS	Domestic service
PP	Public service/ professional
RE	Rentier

Source: LED, where the first nine fields are derived from Booth/Armstrong; with the additional tenth field of ‘Rentier’, for those with social titles but no occupation.

As amended with an additional field for ‘Rentiers’, the Booth/Armstrong schema can then be used with some confidence in application to eighteenth and nineteenth-century occupational data. Table 92 gives the 10 major groupings and the 79 sub-fields used in the LED, and the number of distinct occupational or status labels (out of an aggregate total of 673) within each sub-field.

Table 92 Breakdown of the major fields and sub-fields within the enriched Booth/Armstrong classification

Code	Major field OCC/level 1	Code	Sub-field OCC/level 2	Distinct occupational or status label
AG	Agriculture/ fishing	AG01	Farming/ land service	5
		AG03	Breeding	2
		AG04	Fishing	1
MI	MI Mining			
BU	Building	BU01	Management	4
		BU02	Operative	28
		BU03	Road-making	1
MF	Manufacturing	MF01	Machinery	7
		MF02	Tools	16
		MF03	Ship-building	3
		MF04	Iron and steel	13
		MF05	Copper, tin and lead	10
		MF06	Gold, silver and jewels	16
		MF07	Earthenware	12
		MF08	Coal and gas	0
		MF09	Chemical	7
		MF10	Fur and leather	13
		MF11	Glue and tallow	1
		MF12	Hair	6
		MF13	Wood workers	19
		MF14	Furniture	16
		MF15	Coaches	26
		MF16	Paper	1
		MF17	Floorcloth	1
		MF18	Woollens	13
		MF19	Cottons and silk	5

	MF20	Flax and hemp	4
	MF21	Lace	9
	MF22	Dyeing	4
	MF23	Dress	27
	MF24	Dress sundries	11
	MF25	Food preparation	5
	MF26	Baking	7
	MF27	Drink preparation	6
	MF28	Smoking	0
	MF29	Watches and instruments	14
	MF30	Printing	10
	MF31	Unspecified	2
TR Transport	TR01	Warehouses	1
	TR02	Maritime navigation	3
	TR03	Inland navigation	5
	TR04	Railways	0
	TR05	Roads	16
DE Dealing	DE01	Coal	9
	DE02	Raw materials	28
	DE03	Clothing materials	9
	DE04	Dress	18
	DE05	Food	45
	DE06	Tobacco	3
	DE07	Wines, spirits and hotels	19
	DE08	Coffee	3
	DE09	Furniture	5
	DE10	Stationery	10
	DE11	Household utensils	19
	DE12	General dealers	13
	DE13	Unspecified dealers	12
IS Industrial service	IS01	Accountants and clerks	5

	IS02	Labourers	1
DS Domestic service	DS01	Indoor service	4
	DS02	Outdoor service	1
	DS03	Other services	12
PP Public services/ Professional	PP01	Central administration	4
	PP02	Local administration	10
	PP04	Army	26
	PP05	Navy	2
	PP06	Police and prison service	2
	PP07	Law	7
	PP08	Medicine	14
	PP09	Graphic arts	7
	PP10	Performing arts	4
	PP11	Literature	0
	PP12	Science	1
	PP13	Education	7
	PP14	Religion	7
	RE Rentier	RE00	Miscellaneous status
RE01		Gentry	1
RE02		Esquires	5
RE03		Knights and baronets	4
RE04		Aristocracy	5
		= 79 SUB-FIELDS	= 673

Source: LED.

A further refinement to the occupational classification used for the LED, as for the Westminster Historical Database before it, inserts a further tier into the economic typology. A third level is introduced to indicate, within each sub-field, any further significant groupings of trades and occupations. The number of sub-fields and third-level fields can

always be expanded, if the data indicate any further significant occupational clusterings.

Thus a ‘hat-maker’ appears under Manufacturing as the major field at OCC/level 1. It then appears under ‘dress’ as the sub-field as OCC/level 2. And under ‘hats’ as the significant grouping within the sub-field of ‘dress’ as OCC/level 3. When encoded, the result is MF23003. Obviously enough, MF represents ‘making’, 23 the sub-field of dress; and 003 the sub-sub-field of hats.

The immense flexibility of such a numeric string is apparent, allowing for researchers to probe the urban economy in unprecedented detail.

5 Individual occupational attributions

All stated occupations found in the poll books and other records used in the LED proved possible to classify within this system, although only the poll books for Westminster before 1820 recorded occupations on a consistent basis.⁴² In all other cases, where individuals were listed without any occupational information, null values were entered in the occupation field.

So the information about occupations is selective, not relating to all voters. But everything available is treated systematically. And all occupations found a home within one field or another. Notably, the systematic scope of the Booth/Armstrong classification also means that that is no residual clump of occupations grouped under the unhelpful heading of ‘Miscellaneous’.

When inputting data into the LED, some minimal compromises were made. Some elements of subjective judgment were required at the margins. Thus occupational terms with variant spellings and obvious abbreviations were treated as one category. A minority of researchers prefer to retain a separate coding for every minor variant;⁴³ but that makes the overview excessively splintered. Indeed, the degree of rigour (or otherwise) in identifying occupations affects the analytical outcome. In other words, those who list ‘taylor’ and ‘tailor’ as two separate avocations will generate a spuriously higher total do those who count them as one.

Hence to provide a reasonably accurate ‘job count’ in terms of types of employment it is necessary to aggregate obvious variants - but without going too far and losing the rich diversity, including numerous regional variations, within the data.

Relatively few individuals gave more than one stated occupation. When such cases were found, they were classified under the occupational designation that seemed the most fully descriptive. If that was not feasible, then the first job title was given priority. But fortunately – and interestingly for the light it throws upon economic specialisation – most

cases of dual occupations related to cognate employments (such as ‘painter and glazier’) and only very few fell into economically discrete fields.

Each classification code remains unique to each occupation, so enabling historians to count the number of separate occupations found within any given economy. Data in the poll and rate books for the city of Westminster between 1749 and 1820, for example, manifest a remarkably wide range of distinct avocations, amounting to 1,612 in all.⁴⁴ Their breakdown showed that these occupations were distributed among 79 major categories and, in further detail, among 404 sub-fields.⁴⁵

The breakdown of this occupational data between the major fields and sub-fields, taking Westminster’s voters in 1784 as exemplars, is shown in Table 93. As a great commercial centre and a hub of polite society, it was not surprising that Westminster contained a substantial bloc of voters with occupations in ‘dealing’ and also another numerous group classified as ‘rentiers’. But the evidence also provides a salutary reminder that the second largest bloc in 1784 were the artisans and craftsmen who manufactured goods for the shopkeepers to sell and the gentleman to purchase. Westminster was a working city, with a diverse economy; and these occupational interests provided the deep context behind the public politics and electoral contests.

Table 93 Distribution of voter’s occupations in Westminster, 1784

Code	Major field	No of distinct occupations	No. of voters
AG	Agriculture/ gardening	8	160
MI	Mining	0	0
BU	Building	33	1,213
MF	Manufacturing	284	3,634
TR	Transport	25	265
DE	Dealing	193	3,847
IS	Industrial service	6	112
DS	Domestic /household service	17	413
PP	Public service/ professional	91	572
RE	Rentier	16	2,012
	TOTAL	673	12,228

Source: WHD now subsumed within LED.

Overall, the LED, with a temporal and social catchment which is much wider than the WHD, records an even greater total figure of some 1,900 separate occupations (and the number would be even greater if variant expressions such as ‘coal dealer’ and ‘dealer in coals’ were counted separately instead of being amalgamated together).

The growing number of discrete occupations provides convincing evidence of a long-term process of job specialisation during Britain’s prolonged industrial development.⁴⁶ The sub-division of labour was not solely explained by mechanisation but was instead part of the prolonged prelude to technological innovation.⁴⁷ As some key forms of work (especially in manufacturing) were broken down into separate components, each undertaken by a different worker, so were augmented the opportunities for streamlining work processes to increase productivity and for changing styles of production to allow the adoption of new ways. Adam Smith’s account in 1776 of the case of English pin-making drew attention to the process. To make one tiny pin, 18 different processes were involved, each carried out by a separate worker: ‘one man draws out the wire, one man straightens it, a third cuts it, a fourth points it’ and so forth.⁴⁸

In practice, pin-making was rather less systematically sub-divided than Smith implied. Nonetheless, from this apparently ‘trifling’ example of job specialisation, in Smith’s own words, large consequences eventually flowed. The diversification of workforce skills was happening, moreover, alongside the spread of technical skills within the wider society, albeit well in advance of advent of universal education.⁴⁹ The evidence from London within the LED supplies further important evidence of the specialisation process. In the long term, not only was the balance of employment within the economy shifting, with the decline of agricultural employment and the rise of manufacturing, commercial and professional occupations,⁵⁰ but there was also – still alongside older forms of multi-tasking - a streamlining of working processes.

Following ‘best practice’, now made easier by flexible computer coding, the LED’s classification of occupations respects the authenticity of the historical sources. Its occupational data all indicate the original occupational specifications. Users can undertake the (admittedly lengthy) task of reclassification, if they wish. And the data relating to thousands of individual occupations can be analysed systematically both for macro-overviews and for micro-studies.

ENDNOTES:

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- ¹ The research upon which this essay is based began initially for PJC's research project, P.J. Corfield, 'Urban Occupations in Britain in the early industrial revolution' [Economic & Social Research Council ESRC FOO/23/2007, 1983-5]. The Booth/Armstrong classification system has since then been refined in the course of collaborative work with colleagues. See esp. E.M. Green, 'Social structure and political allegiance in Westminster, 1774-1820' (University of London, unpub. PhD. thesis, 1992); C. Harvey. E.M. Green and P.J. Corfield, *The Westminster Historical Database: voters, social structure and electoral behaviour, with CD-ROM*, (Bristol, 1998), pp. 71-117; and E.M. Green, P.J. Corfield and C. Harvey, *Elections in Metropolitan London, 1700-1850: Vol. 1 Arguments and Evidence; Vol. 2, Metropolitan Polls*, Bristol, 2013). The invaluable help and collaborative enthusiasm of Edmund Green and Charles Harvey over many years are warmly acknowledged.
- ² For examples, see M.B. Katz, 'Occupational classification in history', *Journal of Interdisciplinary History*, 3 (1972/3), p. 70.
- ³ On the 'economy of makeshifts', see O.H. Hufton, *The poor of eighteenth-century France, 1750-89* (Oxford, 1974), pp. 69-127; and case study in T. Wales, 'Poverty, poor relief and the life cycle: some evidence from seventeenth-century Norfolk', in R.M. Smith (ed.), *Land, kinship and life-cycle* (Cambridge, 1984), pp. 351-404.
- ⁴ A point stressed by M. Roberts, 'Women and work in sixteenth-century English towns', in P.J. Corfield and D. Keene (eds), *Work in towns, 850-1850* (Leicester, 1990), pp. 86-102.
- ⁵ The debates are introduced in B. Hill, *Women, work and sexual politics in eighteenth-century England* (Oxford, 1989); and P. Hudson and W.R. Lee (eds), *Women's work and the family economy in historical perspective* (Manchester, 1990). For international comparisons, see also I. Arriagada, *The urban female labour market in Latin America: the myth and the reality* (Santiago de Chile, 1998); B. Whelan (ed.), *Women and paid work in Ireland, 1500-1930* (Dublin, 2000); and S. Jenkins, *Gender, place and the labour market* (Aldershot, 2004).
- ⁶ See discussions in P. Horn, *Children's work and welfare, 1780-1890* (Cambridge, 1994); and M. Rahikainen, *Centuries of child labour: European experiences from the seventeenth to the twentieth centuries* (Aldershot, 2004).
- ⁷ On this see, P.J. Corfield, 'Defining urban work', in Corfield and Keene (eds), *Work in towns*, p. 217; and J.M. Bellamy, 'Occupation statistics in the nineteenth-century censuses', in R. Lawton (ed.), *The census and the social structure: an interpretative guide to the nineteenth-century censuses for England and Wales* (1978), pp. 165-78.
- ⁸ Four individuals had 'criminal' labels (for minor offences such as 'poacher') attributed to them in the 1881 national census, while a further six were adjudged as morally unworthy ('cad'; 'single woman of bad character'): ex inf. Woollard, 'Comic and curious occupational titles', p. 8.

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- ⁹ C. Booth, 'Occupations of the people of the United Kingdom, 1801-81', *Journal of the [Royal] Statistical Society of London*, 49 (1886), pp. 314-44.
- ¹⁰ See London Electoral Database section 1.12.
- ¹¹ K. Schürer, 'Understanding and coding occupations of the past', in Schürer and Diederiks (eds), *Use of occupations*, pp. 107-8.
- ¹² H. Diederiks and H.D. Tjalsma, 'The classification and coding of occupations in the past: some experiences and thoughts'; and also K. Mandemakers, 'Basic elements of a scheme for successful classification of occupational titles in an interdisciplinary, historical and international perspective', both published in Schürer and Diederiks (eds), *Use of occupations*, pp. 29-30, 36-40; and 41-8.
- ¹³ For guides to this source, see P.J. Corfield with S. Kelly, "'Giving directions to the town": the early town directories', *Urban History Yearbook 1984* (Leicester, 1984), pp. 22-34; and also G. Shaw and A. Tipper (eds), *British directories: a bibliography and guide to directories published in England and Wales (1850-1950) and in Scotland (1773-1950)* (Leicester, 1988; London, 1996).
- ¹⁴ P.J. Corfield, 'Business leaders and town gentry in early industrial Britain: specialist occupations and shared urbanism', *Urban History*, 39 (2012), pp. 20-49. Now available on PKC website www.penelopejcorfield.co.uk as Pdf 25.
- ¹⁵ J.D. Burn, *The autobiography of a beggar boy* (1855), pp. 174-5.
- ¹⁶ Armstrong, 'Use of information about occupation', pp. 194-5.
- ¹⁷ On the problems and possibilities of using 1951 census data to discover economic status within work, see Cole, *Studies in class structure*, pp. 151-6.
- ¹⁸ This was Dr William Ogle, citing the contrast with European censuses where the forms were completed by officials: see Booth, 'Occupations of the people', p. 442.
- ¹⁹ Armstrong, 'Use of information about occupation', p. 195.
- ²⁰ Diederiks and Tjalsma, 'Classification and coding of occupations', pp. 29-40, esp. p. 35.
- ²¹ See R.M. Hartwell, 'The service revolution: the growth of services in the modern economy, 1700-1914', in C.M. Cipolla (ed.), *Economic history of Europe, vol. 3: the industrial revolution, 1700-1914* (1976), pp. 358-61; and E.A. Wrigley, 'Country and town: the primary, secondary and tertiary peopling of England in the early modern period', in idem, *Poverty, progress and population* (Cambridge, 2004), pp. 290-314.
- ²² Wrigley, 'The occupational structure of England in the mid-nineteenth century', in *ibid.*, pp. 129-203, esp. p. 197. His Appendix 2 (pp. 187-203) specifically compares his 1851 classification with results as classified by using Booth/Armstrong.

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- 23 See L.A. Clarkson, *The pre-industrial economy in England, 1500-1750* (1971), pp. 77-8 and tabulation of evidence in pp. 88-9: table 2.
- 24 See London Electoral Database section 7.12 for extended discussion of this point.
- 25 From D. Galenson, *White servitude in colonial America: an economic analysis* (Cambridge, 1981), pp. 35-6.
- 26 From J. Ellis, 'A dynamic society: social relations in Newcastle upon Tyne, 1660-1760', in P. Clark (ed.), *The transformation of English provincial towns, 1660-1800* (1984), pp. 217-20.
- 27 For diversity in classification systems, see J. Patten, 'Urban occupations in pre-industrial England', *Transactions of the Institute of British Geographers*, n.s., 2 (1977), pp. 296-313, esp. pp. 308-10.
- 28 Corfield, 'Business leaders and town gentry', pp. 33-4.
- 29 P. Lindert, 'English occupations, 1670-1811', *Journal of Economic History*, 40 (1980), pp. 685-712.
- 30 Lindert's figures were influential in the model constructed by Crafts, who calculated lower rates of economic growth in eighteenth-century England than were conventionally accepted by economic historians: see N.F.R. Crafts, 'British economic growth, 1700-1831: a review of the evidence', *Economic History Review*, 2 ser., 36 (1983), pp. 177-99; and esp. idem, *British economic growth during the industrial revolution* (Oxford, 1985).
- 31 Lindert, 'English occupations', p. 711.
- 32 As evidence for that comment, the sundry occupational data in Clarkson show four agrarian counties with high percentages of the workforce engaged in agriculture at different dates in the sixteenth and seventeenth centuries (Devonshire 67.4%; mid-Essex 78.7%; Oxfordshire 69.4%; Worcestershire two sets of sources showing 59.3% and later 67.2%), although none is based upon anything as thorough as an occupational census: Clarkson, *Pre-industrial economy*, pp. 88-9.
- 33 Total living in towns with 2,500 or more inhabitants in 1700: see P.J. Corfield, *The impact of English towns* (Oxford, 1982), pp. 6-9. For slightly variant but broadly congruent figures, see also C.M. Law, 'Some notes on the urban population of England and Wales in the eighteenth century', *Local historian*, 10, (1972), pp. 13-26.
- 34 See R.C. Allen, *The British industrial revolution in global perspective* (Cambridge, 2009), pp. 14-16, 268; and idem, 'Britain's economic ascendancy in European context', in L.P. de la Escosura (ed.), *Exceptionalism and industrialisation: Britain and its European rivals, 1688-1815* (Cambridge, 2004), pp. 15-34.
- 35 For Charles Booth (1840-1916), social statistician and philanthropist, see *ODNB*; B. Gidley, *Charles Booth and the proletarian other: the politics of representation* (2000); and the Charles Booth Archive at www.booth.lse.ac.uk

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- 36 W.A. Armstrong, 'The use of information about occupation, part 2: an industrial classification, 1841-91', in Wrigley (ed.), *Nineteenth-century society*, pp. 226-310.
- 37 Ibid., p. 250: table 7.
- 38 Corfield, *Business leaders*, p. 41.
- 39 D. Defoe, *A tour through the whole island of Great Britain* (1724-6; in Everyman edn, 1962), ii, p. 183: 'This town of Sheffield is very populous and large, the streets narrow, and the houses dark and black, occasioned by the continued smoke of the forges, which are always at work'.
- 40 Corfield, 'The rivals', pp. 1-30. And see fuller discussion in London Electoral Database section 7.12.
- 41 Armstrong, 'Use of information about occupation', pp. 229, 253.
- 42 For the poll books, see London Electoral Database section 2.1.
- 43 R.J. Morris, 'Occupational coding: principles and examples', *Historical social research*, 15 (1990), p. 5.
- 44 Harvey, Green and Corfield, 'Continuity, change and specialisation within metropolitan London', pp. 481-4.
- 45 For details, see *Westminster Historical Database*, p. 94: table 4.6.
- 46 A 1747 handbook to metropolitan occupations itemised 367 separate avocations, whilst by the later eighteenth century the urban directories collectively specified almost 2,000. None of these were data based upon anything as systematic as a census survey; yet the scale of the increase in the later eighteenth century was suggestive: see Corfield, 'Business leaders and town gentry', pp. 33-4.
- 47 On this theme, see J. de Vries, 'The industrial revolution and the industrious revolution', *Journal of Economic History*, 54 (1994), pp. 249-70; J. Mokyr, *The gifts of Athena: historical origins of the knowledge economy* (Princeton, 2002), esp. pp. 28-77; J. Stobart, *The first industrial region: north-west England, 1700-60* (Manchester, 2003); and J. Bezis-Selfa, *Forging America: ironworkers, adventurers and the industrious revolution* (Ithaca, N.Y., 2003).
- 48 A. Smith, *An enquiry into the nature and causes of the wealth of nations* (1776; in 1970 edn), i, pp. 4-5.
- 49 D. Mitch, 'The role of human capital in the first industrial revolution', in J. Mokyr (ed.), *The British industrial revolution: an economic perspective* (Boulder, Co., 1993), pp. 267-307.
- 50 On the tensions between old and new, see P. Joyce, 'Work', in Thompson, *People and their environment*, pp. 131-9, 143-8.