Distinctive Patterns of Industrial Urbanisation in modern Tokyo, *ca* 1880–1930

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Abstract: Industrial growth in Japan's largest cities has followed patterns that are distinctive, and are significantly different from those that have been adduced in the recent literature on North America. This paper focuses on Tokyo, and in particular its north-eastern part, in the late nineteenth and early twentieth centuries. It argues that a process of 'industrial urbanisation' occurred in Japan's capital city, a process that was shaped by the existence of a large proto-industrial base and sophisticated consumer economy and characterised by dynamic but disorderly growth in factories largely supplying consumer goods to the urban market. The paper reviews the disparate, not to say confused, nature of industrial growth in Tokyo, noting the variety in factory size and products as well as production methods. Central to the argument of this paper is that industrialisation preceded attempts at urban planning and that the processes of industrialisation and urbanisation occurred concurrently, laying the base thereby for the large mixed-function districts that became a common feature of Japanese cities.

Keywords: Tokyo; industrialisation; crafts-based production; urbanisation; continuity; waterways

Production and consumption in Japan's urban centre

'Industry and the city have grown together as a unified process of geographic development. Industry does not locate in the city, it helps create the city'.[i] This is as true for Japan as it is for North America, the context for which the comment was designed. Indeed, Japanese cities, and Tokyo foremost among them, have been shaped by industry to an unusual degree. Tokyo, in its earlier incarnation as Edo, had been a great urban centre of consumption but one that was serviced by a vast amount of crafts-based and agricultural activity in and around the city. It grew in the modern era into the world's largest industrial conurbation, outstripping, on the way, first Osaka and then all its international rivals.

Within this context of dynamic and varied industrial endeavour, I assess in this paper the broader significance of industrial growth in early twentieth century Tokyo. If Tokyo can be seen as the archetypal modern industrial Japanese city, what were the patterns and processes behind the expansion of industry in the city? To what extent do they replicate developments in other large cities at around the same period -- the close of the 19th and early decades of the twentieth century? To what extent are they particular to Japan and to Tokyo? I will argue that Tokyo grew through a symbiosis between city and industry; in the process urban conditions and an urban landscape were created that were quite different from those that prevailed in the other great metropolitan centres of the world. This pattern of industrial urbanisation has continued to frame the urban landscape and the context of urban living in contemporary Japan. Its characteristics are not, when taken individually, vastly different from those that pertained elsewhere, but when considered together, they go to make up a distinctive urban world.

We must note at the outset a number of features that set Japan apart. First is the aggregate and relative size of Japan's urban population -- and especially that of Edo -- during the Tokugawa period (1603-1868). By 1800 almost ten percent of the population lived in cities with

a population of over 25,000, while Edo itself was generally reckoned to have a population of well over a million by the end of the eighteenth century, making it one of the biggest cities in the world. [ii] Secondly, of considerable significance is the extent, variety and sophistication of production and consumption practices during these centuries. Japan possessed a technologically advanced pre-modern industrial and agricultural sector. Goods were transported around a national market and were bought and sold by means of an intricate transaction system.[iii] And thirdly, it should not be forgotten that, almost uniquely among non-European countries, Japan was neither colonised nor did it suffer the quasi-colonial interventions that were meted out on China. Industrialisation occurred, therefore, on the back of a sophisticated commercial economy located in and around cities that were relatively large for a pre-modern state.

These historical conditions had a profound effect on the process of industrial urbanisation in Tokyo (as in Osaka). Thus the large amount of already existing crafts-based production led to a pattern of in-situ industrial urbanisation. The extent and diversity of industry in the city reflected and grew out of the considerable diversity of this proto-industrial production in the pre-modern city. Industrialisation did not precede urbanisation, in the sense that it did not occur outside the framework of an already urbanised society, a society in which consumption practices were largely urban-based. Industrialisation itself engendered first a more intensive and then a more extensive urbanisation. In other words, industry first colonised and transformed those parts of the city where crafts-based production had been concentrated, and then pushed the urban borders outwards in a process that was accelerated (but not initiated) by the Great Kantō Earthquake of 1923. The process of industrial urbanisation and suburbanisation as a whole reflected and grew out of existing land use patterns and was only later influenced and shaped by urban planning measures. The first Town Planning Act was passed in 1919. However, its limited prescriptions were implemented city by city, and in Tokyo their implementation occurred just before the 1923 earthquake, rendering many of them ineffective. What this meant was that much urban industrialisation occurred before Japan had any governmental measures in place to manage the urbanisation process. When planning instruments were implemented, they were seldom used to coral industry into specific zones. The consequences for the environment, for pollution of water and air, were predictably severe.

Tokyo's industrial urbanisation was therefore built on an already existing pattern of crafts-based activity, but equally it was predicated on a number of other factors: a flow of inward migrants to the city, the availability of land, proximity to waterways, and location within a vast urban market. It is the tight fit between urbanisation and industrialisation that this paper examines in an attempt to highlight the distinctive features of Tokyo as an industrial city, one that grew rapidly and in disorderly fashion into a city of factories and small workshops. [iv] The paper starts by setting the city within a broader comparative context, briefly considering how the growth of industry in Tokyo might be compared to similar trends in cities elsewhere in the world, and in particular in North America and Europe. Although the city's historiography tends to be punctuated at the fall of the Tokugawa shoguns, I argue here that important threads of continuity exist in systems and structures of production, and I set these patterns of continuity off against moments of transition. Even after the change of regime in 1868, the central part of the city continued to be the fulcrum of industrial production, and the paper moves onto an examination of the diffusion of modern industrial production from the city centre (in particular Kyōbashi and Nihonbashi wards) to the east and south, and then examines in greater detail the nature of industrial production on the east bank (Fukagawa and Honjo wards) (see Fig. 1). The paper concludes with a few thoughts on the distinctive nature, characterised here as higgledy-piggledy, of Tokyo's industrial urbanisation.

-- Fig. 1 about here –

It is with the eastern wards, and Honjo in particular, that the latter sections of this paper

are chiefly concerned. Honjo and Fukagawa became the city's industrial heartland, taking over from Kyōbashi and Nihonbashi. Both east-bank wards contained pockets of poverty and their economy was characterised largely by traditional, small-scale enterprise in the form of petty traders and crafts-based industrialists. Wrapping itself around the outside (east and northeast) of Honjo and Fukagawa wards was Minami Katsushika, one of six counties that fell within the city boundaries along with the fifteen wards. Already in the late nineteenth and early twentieth centuries, larger factories were being established in Minami Katsushika county, and this process was intensified when, after the Great Kantō Earthquake of 1923, many smaller manufacturing establishments moved the short distance out into the county.

Industry and the growth of cities

This paper concentrates on the later decades of the nineteenth and early decades of the twentieth centuries (equivalent to the mid and late Meiji, Taishō and first years of the Shōwa periods). It is necessary, however, to understand that period in the context of what came before, not least in view one of the central contentions of this paper, that despite being punctuated by periods of huge disruption, it is the patterns of continuity that need to be seen as pivotal.

A tendency among Japanese and non-Japanese historians to specialise, not only in specific urban areas, but also in pre or post 1868 historiography has been conditioned at least partly by the somewhat differing bibliographic demands involved. Scholarly research on the commoner class in Edo is confronted with the not inconsiderable issue of a lack of substantive evidence in the form of written records. But a number of writers, including Garry Leupp and before him Inui Hitsumi and Ikegami Atsuhiko, have made astute use of a variety of different sources to paint a picture of the life of apprentice artisans, porters and haulers, servants and other inhabitants of the shacks that were to be found in the backstreets of the city, and especially on the urban periphery in areas like Honjo and Fukagawa.[v] As the Edo period wore on, conditions became more precarious, as is vividly recounted in the autobiography of an impoverished samurai, translated as *Musui's Story*.[vi] The end of the period was characterised by rampant disquiet occasioned by economic dysfunction, by disgruntlement with the direction of Tokugawa policies and rumours of their demise coupled with a fear of and hostility to the approaching army from the southwest of the country, all of which is well documented by William Steele.[vii] Perhaps the most intriguing question about the transition from shogunal to imperial rule relates to the social transformation of those who for various reasons -- often because they had little choice -- remained in the city. How did they cope? How did they position themselves in the suddenly transformed landscape of their familiar city? These are some of the questions that Henry Smith has considered.[viii] But much of the research that would give life to the discussion in this paper has yet to be undertaken. Thus we still know little about the people who stayed on or moved in to constitute the embryonic working class of Tokyo, and whose working lives would give colour to the sketch of industrial change and development laid out below.

The extent and rapidity of change during the decades under consideration was dramatic. The process of industrial urbanisation saw by 1920 the appearance of almost 2,500 factories in the 15 square-kilometre expanse of Honjo and Fukagawa wards. The human social pressures caused by this temporally and spatially condensed transformation have been commented on and written about by a number of authors, both as it was happening and in more recent times. The conditions faced by female workers in the mills of Meiji Japan is the subject of two monographs, by Patricia Tsurumi and Janet Hunter, that help inform an understanding of urban industrialisation in this period., while Barbara Moloney has provided a succinct but well-observed account of the conditions faced by female workers in cotton mills.[ix] Some of the richness of detail of these accounts stems from the existence of a small number of contemporary reports, of which the best known, that of Hosoi Wakizō, recounts conditions in a large mill on the Tokyo east bank.[x] Both

the suffering and struggles of the textile workers found spasmodic voice in labour unrest. The story of incipient labour union campaigns in Tokyo, and specifically on the industrial east bank, is told by Andrew Gordon. In another study set on the east bank of the Sumida, Sally Ann Hastings describes the attempts by lower levels of the state to reach out to the local citizenry and create structures of social welfare that would form the bedrock of a form of participatory democracy.[xi] These two works play off each other, in the sense that Gordon is concerned with the beginnings of attempts by labour, using a territorial basis, to challenge the authority of capital. Hastings, on the other hand, is interested in the creation of a social glue built around attempts by the state to reach out to local people.

The state was clearly not inactive; the question that has framed debate for many years surrounds the nature and extent of state involvement in planning Japan's industrialisation and its economic growth. As with the period a century later, the conventional view of Japanese industrial and, more widely, economic development has been one which sees the government as an important player. According to this view, industrial expansion and economic growth was successfully steered by Meiji leaders and was delivered by entrepreneurs close to power, the *seishō*. Together they had a understanding of what they saw as national priorities and the most effective means to advance them. This view has since been nuanced, in particular in regard to specific time frames within this period. Morris-Suzuki, for example, draws attention to the hit and miss nature of early government essays in industrial production.[xii] Mosk sees government industrial policy several decades later -- in the early decades of the twentieth century -- as largely ineffectual. These differing perspectives echo debates that have cascaded down the decades. Central to government policy, says Mosk, is its provision of basic infrastructure, a point supported by Crawcour.[xiii] Rather than the state, Morris-Suzuki argues, the central role was played by industrial associations in fostering innovation and local trade associations in 'providing a trusted source of information on new techniques, but also serving as a means of sharing the risks of innovation amongst many producers'.[xiv] The trade associations, Morris-Suzuki writes, began as replacements for *tonya*-type guilds. This very much corresponds both to a view of proto-industrial guilds that emphasises their role as loci of social capital formation and to a view of Japanese economic development that looks primarily to the role of social networks as key factors in delivering economic growth and relative social stability.[xv] This view of the role of intermediary organisations corresponds in certain ways to the arguments of Hastings and to some contemporary discussion on the role of civil society.[xvi]

Research into the early years of modern capitalist industrial production in Tokyo and Japan's other large cities has an important part to play in informing debates about Japan's contemporary political economy, and in particular debates about urban and industrial development.[xvii] A clear understanding of the early years of industrial urbanisation in Japan helps to explain both the very wide span of Japanese production in the ensuing decades and its close integration into the urban fabric. One of the most distinctive features of Japan's largest conurbations, Tokyo and Osaka, is the vast expanse of mixed industrial and residential districts that characterise them. The east bank and similar districts in the south of Tokyo and in Osaka by no means represented the only type of industrial landscape. In various parts of the country, for example in the north part of the plain on which Tokyo stands, larger cotton mills or clusters of smaller silk-weaving establishments stood relatively isolated from the urban infrastructure. Elsewhere, if a little later, one large plant came to dominate manufacturing in some towns creating thereby company towns like Toyota and Hitachi. And in a third distinct pattern, specialist industrial districts developed; these were smaller centres of industrial production (known generically as *jiba sangyō chiiki*) such as Kawaguchi north of Tokyo (iron smelting). The sheer expanse of the urban industrial districts of east and south Tokyo generated a variety of industrial sectors and ensured their continued development.[xviii]

It would be a mistake, however, to imagine that urban growth in Tokyo occurred in a totally haphazard way. Through most of the 1880s, a debate raged over the future functions and

face of the city; the debate is generally considered to have pitted the proponents of an 'imperial capital' (*teito*) -- the aristocratic solution, one might say -- against the ('commoner') advocates of a commercial and industrial centre.[xix] This view of the debate over what sort of city to fashion would seem to have been shaped by some of the participants themselves, notably Shibusawa Eiichi. Regardless of the parameters of the debate on the best direction for Tokyo, the Meiji leaders never cast in doubt the need to prioritise industrial development within the country's main cities, Osaka as well as Tokyo. Various figures, from the worlds of politics, business (Iwasaki Yatarō, Shibusawa Eiichi), and beyond (Mori Ōgai), attempted to impose their vision of the city on the urban landscape, although none of them managed to do so with the same degree of success as Seki Hajime in Osaka.[xx] Nevertheless, lack of finance and the absence of an overarching vision for the city meant that planning measures were piecemeal at best and otherwise generally oriented to engineering-based infrastructural improvements.

A striking feature of the process of industrial urbanisation that characterised Tokyo (as well as Osaka) in the late nineteenth and early twentieth century is the significant difference with developments in very large cities elsewhere in the world. This is not surprising given Japan's recent and rapid transition from a commercially sophisticated but socially and politically sclerotic system under the Tokugawa shoguns to a state-led form of hierarchical capitalism. Perhaps there might have been more in common with the large cities of other late developing capitalist states, but neither Germany nor Italy (to give two obvious examples) had previously been unified and neither had a city even approaching the size of Tokyo. As for the cities of China, these were in no condition to host the sort of industrial urbanisation that occurred in Tokyo.

It is in London and Paris that one sees echoes of Tokyo, but the London and Paris of a somewhat earlier period.[xxi] In the very broadest terms the British, French and Japanese capitals all possessed a crafts-based, industrial east of the city and a more residential west, although the picture was really a lot more nuanced than this generalisation suggests. The same sorts of goods were produced in the three cities, with the manufacture of clothes and shoes as central activities. Perhaps the greatest similarities were with Paris, which retained its industrial base longer than London -- although not as long as Tokyo. In both cities, we see a concentration of activity in industries for the urban market, including soap and candles.

The patterns of industrial urbanisation in Tokyo (and Osaka) raise, therefore, different issues than do those in a North American, European or Chinese setting.[xxii] In the North American context, industrial suburbanisation has tended to be seen in terms of business chasing reduced costs and freedom of manoeuvre by moving out of inner city areas. Recent scholarly contributions have drawn attention to the long-lasting nature of the process. Walker and Lewis, building on earlier ideas such as those advanced by Scott, have challenged all-too-easy assumptions that the movement of industry to suburban locations was conditioned by the availability of the automobile. They depict a process, underway since the nineteenth century, that underlines 'geographical industrialization, property development, and political control' as central elements 'critical to a reinterpretation of metropolitan/suburban theory'.[xxiii] One or more of these elements comes across in the other contributions to this recent re-writing of industrial suburbanization in North America.[xxiv] Nor are such considerations totally absent in the context of Japan, as we will see below. One such, when leaders of a community just outside the Tokyo municipal area pulled out all the stops to attract a large government factory, is discussed below.[xxv]

Harris, writing on Toronto, is one of a number of researchers who sees the suburbs of North American cities as being above all an arena of improvised urbanisation.[xxvi] Working people sought out the various freedoms offered by greater space on the edge of the city to build their own homes. A similar picture of do-it-yourself urbanisation is evident in the *banlieues* of Paris.[xxvii] In the north American context in particular, but also to some extent in that of Paris, this was a process driven largely by migrants -- above all, from east and south Europe. Urban Japan, for its part, always had a do-it-yourself feel to it, augmented by the amount of rebuilding that

occurred after earthquakes and fires. Japanese cities have long had a high quotient of small construction companies -- somewhere between builders and carpenters -- and nowhere more so than in areas like the east bank in Tokyo. But most migrants to Japanese cities came not from different countries or continents but from rural areas. Neither the economic nor the built environment of Japanese cities favoured the construction of spacious dwellings.

Generally speaking, then, at least in the north American context, the trend of recent research has involved a move away from a simplistic urban dualism that sees the inner city belt as being characterised by low standard housing and industrial infrastructure and the suburbs as the domain of the middle classes. At one level this is saying no more than that the Chicago School have been sent packing. At another level, however, it is supporting the notion of path dependence. Different patterns predominate in different places according to locally specific factors. That is not to say there are no similarities to be found. Some of the trends mentioned in the context of North American cities came into play during phases of Tokyo's suburbanisation a little later than the period examined here; for example, preparation for war led to a limited degree of planned industrial suburbanisation. But the general picture is one of different starting points and divergent trajectories.

Patterns of continuity and moments of transition

The starting point in Tokyo's case -- if there can be said to have been one -- lay in pervasive crafts-based production of the shogun's capital city, Edo. In this section of this paper, the continuities in the geographies of production between shogunal Edo and imperial Tokyo are examined. The production geographies of Edo did not disappear or melt away with the change of regime. Rather, they transmuted. Here, we consider the nature of these transmutations, looking to emphasise, wherever appropriate, the continuities between the crafts-based production of the shogun's capital and the early Meiji years and the transition to modern manufacturing.[xxviii]

The human and economic continuities

Most authorities agree that Edo was for a long time the largest city in the world. About half of its population was made up of samurai -- members of the military class -- in various guises, either retainers of the shogun or of the daimyō (regional barons), who were decreed to sojourn for substantial periods of time in the shogun's capital city. There was therefore a very large market of consumers for products of every possible kind in the city. Many products were shipped over from the great commercial centre of Osaka, surrounded as it was by the most productive regions of Japan.[xxix] Nevertheless, a growing amount of produce -- of which foodstuffs formed a preponderant part -- made the shorter journey to Edo from the surrounding provinces in the east of Japan. And while Edo was not as important a centre of production as Osaka and its provinces, there was a large population of artisans in the city. However, as the Tokugawa period wore on, they found themselves increasingly casualised, relegated to the backstreet, often working outside the official system of wholesaler-managers, generally organised into guilds and known as *tonya*.[xxx]

With the fall of the shogunate, the feudal lords returned to their (former) domain capitals; so came to an end the system of alternate attendance, under which they had been compelled to spend regular periods in the shogun's capital. The sites of their compounds in Edo fell vacant. Many of them had contained large warehouse compounds on the east bank of the Sumida river, where the provisions they and their large retinue needed were kept. A number of these were taken over by commercial ventures and continued to be used as storage, for rice, *sake*, *miso* bean paste and a wide range of other food and industrial products. Vegetable farming, nursery cultivation and fish ponds remained important features of the landscape in the areas just beyond the streets, houses and canals of Honjo and Fukagawa. A number of quay-side markets continued

to operate well into the Meiji Period. Various proto-industries also continued into Meiji years, a principal example being the tile kilns of the northern part of Honjo (see Fig. 2). Although there is a lack of detailed evidence, it has generally been assumed that those crafts-people who remained in the city on the fall of the shogunate (and they must have formed a majority) continued working as they had done previously despite the changing economic and political circumstances. Some turned themselves into an embryonic working class, selling their labour to the small but growing number of industrialists. Others, less fortunate, became rickshaw pullers.[xxxi] Unlike most members of the military class, they had nowhere else to go, no domain capital to return to. But they were joined by two groups from the military class. First, there were those whose curiosity for Western technology led them to the sort of 'grassroots innovation' and entrepreneurial production that Morris-Suzuki sees as so fundamental to Japan's process of modernisation.[xxxii] A second, numerically larger group was made up of poorer samurai, many from small domains in the mountains and in the northeast of the country, who had been forced into earning a living through any means at their disposal, and this most often meant petty crafts production. Many of the proto-industrialists of Honjo Ward, on the east bank of the Sumida, were samurai. Indeed, the implantation of industry was one conscious part of a policy designed to help ex-samurai.[xxxiii] As such it can be considered a failure, but it was important in installing former samurai into management of factories using modern machinery.

-- Fig. 2 about here --

The old monopoly guilds were banned early in the Meiji period, but out of their membership grew some of the foremost companies of modern Japan. The wholesaler-managers lost many of their privileges in 1873 as a result of legal changes to their status.[xxxiv] Yet they retained a powerful position as sometime contractors as well as purchasers of locally manufactured products. Both in Tokyo and Osaka (and it is important to remember that until the 1930s Osaka was Japan's major industrial city), the existence of a wholesaler-manager (in an establishment known as a *tonya*), who placed orders, supplied materials and controlled the production process, was critical to the functioning of small producers. For the most part, the *tonya* operated according to the traditional rules and codes, continuing to exercise considerable power and control over the proto-industrial artisan producers of Tokyo.

Continuities in geographical patterns of production and organisation

Continuity in geographical patterns of proto-industrial and industrial production has been one of the hallmarks of early modern and modern Japan. This is as much the case in Tokyo as it is elsewhere in the country. The main foci of crafts-based production in Edo lay in Kanda and Kyōbashi, on either side of the central district of Nihonbashi. Nihonbashi itself was the fulcrum for commercial activity. Indeed, in a geographical tableau that has continued to the present day, most of the *tonya* had their shops in the district of Yokoyama Bakurochō on the northeast side of Nihonbashi, with another cluster within Nihonbashi itself.[xxxv]

The distinctive nature of the southern and eastern industrial zones -- the first stretching south from Kyōbashi and Shiba and the second east from Honjo and Fukagawa -- has its origins in the early Meiji period, if not before. Electrical machinery became from an early date the lead industry in the southern industrial zone. It grew out of the print shops and machinery plants that characterised Kyōbashi ward and the area just east of Ginza in the city centre. To give one of just several prominent examples, the company later known as Tōshiba (after the Shiba area, south of Ginza, where it still has its head office) was founded in Kyōbashi ward in the early 1890s.[xxxvi]

Continuity, and with it diversity, was even more pronounced in industrial production in the northeast of the city. The city's waterways remained as important a feature as ever (as they were for Osaka too), and this was particularly the case on the east bank of the Sumida River (see Fig. 3).[xxxvii] Here, both the human and physical patterns manifested continuities that helped shape the

nature of social and economic development. The east bank of the river, although close to the centre, had been urbanised rather later than the rest of the city. Fukagawa, where the storehouses of the feudal lords had been located, became a centre of food processing, as well as being the site of the main timber market. In the 1870s, there were over 100 warehouses in Fukagawa covering 66 hectares. Along the northern reaches of the east bank, in the area known as Honjo, the canals were lined with blocks of commoners' housing (*machiya*). Throughout the east bank there was an unusual mix of housing for the commoner class and for a growing number of poorer samurai, many of whom had lost their employ and were forced into any artisanal work they could find to make ends meet.[xxxviii]

-- Fig. 3 about here –

The first large state enterprises (*kan'ei kōjō*) were all located along the river Sumida or on one of the canals that flowed into it. A waterside location was considered essential. Around the large factories that were founded early on in this part of the city, were a shoal of tiny backyard workshops, with the medium ground between the two extremes growing more slowly. Perhaps *the* distinguishing mark of industrial production in the northeast of the city was its diversity. As we shall see later, while textiles and metals and machinery formed the mainstay, most of the workshops of the northeast were involved in the production of goods for purchase and consumption in the city, goods that are known today as *nichiyōhin*, articles for daily use. Many of the industries of the northeast grew out of existing proto-industrial production. In this way, a complicated pattern of industrial growth developed in the northeast of Tokyo, characterised by its aggregate size and by its diversity, a pattern that has persisted to the present day.

Temporal points of transition

In Tokyo's transformation from what was after all primarily a great centre of consumption into Japan's largest concentration of manufacturing, one searches inevitably for temporal signposts to fit alongside the spatial patterns. Yazaki sees the 1895 war with Qing China as an important moment in dragging the economy out of its old feudal structure.[xxxix] For Ishizuka the period between the 1895 war and the 1905 war with Russia was a turning point for industry in Tokyo, with a marked growth at this time of large textile plants and smaller metal and machinery plants.[xl]

Most of the small workshops in Tokyo (as in Osaka and elsewhere in Japan) were operating without even the benefit of steam-driven machinery. The diffusion of electric power represented therefore a step-change of crucial importance for Japanese industry. 'Electrification played a major role,' Mosk writes, 'in stimulating demand because it increased the level of mechanization in factories large and small'.[xli] According to one local history, Meiji can be considered the era of steam and the Taishō period (1912-26), that of electricity, with at least one large electric power transformer being built in the area, in 1910.[xlii] The official history of Asakusa Ward published in 1914 supports the view that this period was a turning point in the electrification of local industry. By 1911, the ward had 288 factories powered mainly by electricity, but also by gas, with a sharp decrease in the number using steam.[xliii]

The most significant event for Japanese industry was undoubtedly the First World War, which tied European production facilities down in the war effort, leaving large global markets unrequited, and it was into this space that Japanese industry stepped, with large increases in the production of steel, ships, and textiles, to name but the principal sectors to benefit (see Table 1).

-- Table 1 about here --

In sum, the emphasis in any picture of industrial change in Tokyo during this period should be on continuities rather than on interruptions. The boundary between crafts-based

production and capitalist industrial production was a porous one; indeed, it is not really a boundary at all so much as an indeterminate point between different phases.[xliv]

From crafts to industrial production in the centre of Tokyo

As we have already noted, the centre of crafts-based production in Edo lay in the bustling densely packed streets of the central areas of the city, Kanda to the north of Nihonbashi and Kyōbashi to the south. And industrial production in modernising Tokyo was initially focussed in Kyōbashi ward and around the mouth of the Sumida river.[xlv] Later, especially in the early decades of the twentieth century, industry spread out to the northeast and to the south.

It is hard to gauge the nature and scale of crafts-based production in Kyōbashi and the rest of the city under the Tokugawa shoguns. We do however have a rich source of information in the form of the *Records of Material on Tokyo Prefecture* (*Tōkyōfu shiryō*), compiled by local officials from the Army Ministry between 1872 and 1874 for Tokyo and its surrounding counties.[xlvi] These records give detailed evidence on the extent and variety of production, and in view of the date of its publication, must closely reflect the nature of production in Edo. Although the *Records* reflect a picture of Tokyo at a time of confusion and contraction just after the handover of power to the Meiji regime, it is nonetheless a fascinating picture of extremely diverse small-scale production. The picture of crafts-based production in Kyōbashi Ward was similar at this stage to that of Honjo Ward on the east bank: working clothes (principally *momohiki* trousers, *harakake* doublets and *tabi* socks), candles, pipes, ivory carvings and other ornaments were all produced in quantity in both the centre and northeast of Tokyo.[xlvii] This picture is reinforced by the work of the historian Ishizuka Hiromichi, who has undertaken detailed research into the nature and shifting geographical location of proto-industrial production in early Meiji Tokyo.[xlviii] Crafts production in the centre of the city, Ishizuka shows, was concentrated in products made of wood (such as clogs, furniture, boxes, etc.), clothing, both Japanese and Western, and, above all, what in Japanese are called *zakka shugeihin*, miscellaneous hand-crafted products, such as objects made of ivory, horn, leather and paper. It is interesting to note that already in the early 1870s artisanal production of 'Western' goods had started, especially of clothes, shoes, and rickshaws. And from an early moment in the Meiji years, there was a tendency to cluster: clothes in Shiba, rickshaws in Ginza, and shoes in Nihonbashi and Asakusa .[xlix]

The switch from human to electric power also occurred earlier in this central area of industrial activity. The Kyōbashi ward history dates the change principally to the years 1896 to 1899.[l] There was a very rapid increase in the number of factories in the ward at the time of war with Russia, in 1905. In what was otherwise a very crowded part of the centre of the city most of this increase in productive capacity at the end of the 19th and start of the twentieth century occurred on a large chunk of land newly reclaimed from the bay.

The years of rapid industrialisation in Japan's capital city saw a diffusion of industry in the two aforementioned directions, southwards and eastwards. In 1880, the largest private manufacturers (capitalised at over ¥30,000) were grouped together in Kyōbashi Ward, for the most part by the bay and next to what had once been the authorised foreign settlement at Tsukiji. In 1901, the number of factories in the central wards of Nihonbashi and Kyōbashi still comfortably exceeded the combined total for the east bank wards of Fukagawa and Honjo, but from around the turn of the century the number of factories in Fukagawa and Honjo wards grew rapidly, and already by 1911 the two wards together formed the largest industrial zone in the city, with Honjo Ward leading the tables in most sectors (see Tables 2 and 3).[li] In Honjo Ward, textiles and chemicals continued to be the most important sectors, while Kyōbashi and Shiba wards still formed the backbone of an important industrial zone, especially in machinery.

-- Tables 2 and 3 about here --

By the time of the Great Kantō Earthquake of 1923 a considerable outward movement had occurred, out from the centre to outer wards such as Honjo and into the ring of counties beyond. The earthquake itself was instrumental in accelerating this process, as factories relocated out of the burnt-out city, but it certainly did not initiate it. Nor did it spell an end to industry in the centre of the city. Kyōbashi Ward in particular remained an important centre of production.[lii] The evolving locational pattern was not very different from that adduced by Carl Mosk for Osaka, which he describes as having a basically ring-shaped pattern: 'Textiles and ceramics tended to concentrate in the periphery. There was a tendency for metalworking and machinery to cluster in the middle ring. Printing establishments were usually found in the core'.[liii]

Growth of the east bank as an industrial suburb

The east bank of the Sumida became the city's largest concentration of industrial production, but there was no element of planning underpinning its growth; instead, it was marked by continuities with an existing proto-industrial base. Table 4 translates entries to the *Records of Material on Tokyo Prefecture* for four districts in the north of the soon-to-be-formed Honjo ward -- Nakanogō Takemachi, Nakanogō Motomachi, Nakanogō Kawarachō, and Nakanogō Hachikenchō. Production of tiles and bricks was concentrated in Nakanogō Kawarachō (*kawara* means tile). Otherwise, productive activity here was marked by its variety and modest scale but also by its direct connections with the urban market. Equally important to the industrial suburbanisation of the east bank was the availability of land, the existence of an extensive network of waterways and the proximity of the city. In particular, two trends are apparent in the location of factories. The first is the siting of larger factories on plots that had belonged to the feudal lords or to the retainers of the shoguns -- a pattern of urban morphological change that has been carefully traced in the east of the city by the geographer Ide Sakuo and that has a more widespread applicability within the city.[liv] The second is the location of a number of pioneering industrial facilities on strategic sites, most of them just beyond the edge of the built-up area. The section that follows begins with an examination of the second of these two developments.

-- Table 4 about here --

In a bid to stimulate industrial development, the Meiji government in its early days, picking up from embryonic moves by the shogunate and certain leading feudal lords, established a number of pilot factories. The sectors were chosen for their strategic importance -- shipbuilding, armaments, textiles for the military -- in pursuance of a wider policy of accelerating industrial development. On the east bank, they were followed by a number of other large industrial implantations, nearly all in textiles, located just beyond the limits of the densely urbanised city. Because of the size of these plants, we have a better idea of some of the issues that surrounded their foundation and operation than we do for the many, much smaller establishments.

It seems that there was a mixed reaction to the idea of locating large industrial establishments amongst residents of the outskirts of Tokyo. In Minami Senju on the right bank of the Sumida, a vigorous and successful campaign was launched by local leaders to persuade the government to choose a local riverside site for its planned spinning mill, seeing off competition from the nearby town of Ōji. It was hoped that the mill would help compensate for the declining prosperity of the area caused by the ending of the Tokugawa highway system with its officially recognised post stations.[lv] At the time when the first red bricks were lain in 1877, this area off the main road out to the north of the city consisted mainly of fields and reeds along the river

bank. As it turned out, the Senju Woollen Mill, which employed up to 25,000 within a few years, was but the first of a number of large factories that were established in the Senju area. Paper and other textile mills followed shortly thereafter.[lvi]

While the Senju Woollen Mill appears to have been welcomed, at least by local elites, there was some discord surrounding the location of Kanegafuchi Bōseki. The Kanegafuchi Bōseki company was formed in 1887 with capital of ¥1 million by six leading members (including Mitsukoshi, Daimaru, and Shiragi) of the former Edo association of cotton wholesalers (*Tōkyō momen tonya kumiai*). In 1888, officials of the company were looking for land on which to build their textile mill, but were met by bewildered and hostile local people. The construction plans prevailed, and the mill was built along the river, just outside the urban area.[lvii] Kanebō, as the mill and company became called, was soon seen as something of an iconic factory in Tokyo, its high-quality cotton thread winning awards at national exhibitions.[lviii] Initial difficulties were overcome at the time of the 1895 war with China, which served as the first of several wartime fillips for Japanese industry. By 1890, according to the Tokyo prefectural statistics for that year, the plant already had over two-thousand workers, of whom three-quarters were women -- 1,695 female and 422 male employees.[lix] In 1912 it had 3,061 workers according to police records for that year, a figure that seems to have remained stable for the following decade if not longer.[lx] This compares with a total population for Sumida Mura (the local administrative unit), whose border the plant straddled, of 4,618 in 1897 and almost double that, 9,094, in 1911. The factory precincts were extensive, and contained, in addition to the factory sheds themselves, several dozen dormitory buildings, a bathhouse, two refectories, and a sick bay.[lxi] The company contributed about a quarter of Sumida tax revenue.[lxii]

Kanebō was not the only large factory on the east bank of the river. Just as with the Senju Woollen factory, less than a mile away on the west bank, others soon followed. Some years later, a local resident recalled people coming to look for land for factories around the mid 1890s because of its cheap price.[lxiii] Other large east-bank textile mills, all of them located along waterways in the Azuma and Kameido areas, included four plants producing the fine cotton fabric known as muslin (*mosurin* in Japanese) (Table 5). Three other textile plants were established on the right bank in the crook of the river between 1894 and 1912.

-- Table 5 about here --

It is axiomatic of this period of industrial production that the few large mills were surrounded by a large number of small and micro establishments, many of which relied on human power.[lxiv] This dual structure was widespread in urban Japan but particularly striking on the east bank. There were, in addition to the textile mills employing thousands of mainly female workers, a considerable number of smaller operations. Honjo Ward had 27 textile factories employing ten or more workers by 1901 and 54 others (including smaller establishments) by 1922 (Table 6). These included dyers, weavers, and tailors. Textile production was the mainstay of Japanese industry throughout this period (and beyond), and it is no surprise that textile factories both large and small formed the largest of the four sectors into which industry was conventionally grouped. Each of these sectors, including textiles, in different ways reflected earlier, proto-industrial production in the area; the others being tile making and the construction-related industry, consumer and "chemicals-related" industries, and metals and machinery.[lxv] Within the industrialised east bank, there was a tendency for manufacturers to cluster, forming a dense and fascinating micro-geography, too detailed for consideration here, but one that has continued to exist down to the present day.

-- Table 6 about here --

Tile kilns had been a feature of crafts-based industry on the east bank for at least a century.

They were concentrated in the north of Honjo ward. As well as the tilers, there were brick bakers and glass blowers distributed throughout the east bank, as well as the Asano cement works in Fukagawa Ward. A few glass manufacturers remain in the area today. The Honjo and Mukōjima areas continued well into the twentieth century to be the principal centres of production for goods such as matches and soap, consumer products destined for sale in large urban centres. Several of Japan's major soap manufacturers started production on the east bank, drawn by proximity to factories processing animal fats; this included the big four soap makers, Kaō, Lion, Shiseidō and Miyoshi. Finally, the east bank contained a substantial number of factories in the metals and machinery sector (a total of 452 in 1922). The best known of these is Seikōsha (today called Seiko), maker of watches and precision instruments, founded by Hattori Kintarō in 1891. The larger plants such as Seikōsha were surrounded by a growing number of smaller ones, engaged in plating and coating metals (*mekkiya*), polluting processes that were consigned to the further reaches of the Honjo area.

Waterways and the diffusion of industry

The vertiginous pace of industrial urbanisation on the east bank was of necessity accompanied by a very rapid growth in the size of the population. The population of Honjo and Fukagawa wards grew from 127,492 in 1885 to 437,528 in the 1920 census. Population densities reflected this growth, reaching 43,362 per square kilometre in Honjo Ward in 1920, surpassed only by the figures for the neighbouring Asakusa Ward on the near bank of the river. A similar process occurred in those parts of Minami Katsushika county immediately adjacent to the ward area (Terajima, Azuma, Kameido), only here the sharpest growth occurred after the 1923 earthquake. Such a rapid rise in the population could in the context hardly have happened without the appearance of social problems arising out of a lack of any form of planning and minimal social welfare. In fact, what is notable is the extent of poverty in the early Meiji years and the speed of progression from generalised poverty to insular poverty, with a number of poverty pockets developing -- small districts characterised by wooden shacks normally built in terraces and often back-to-back and by lodging houses. In the 1920s and 1930s the number of these diminished, and -- broadly speaking -- isolated poverty replaced insular poverty.[lxvi]

The different modalities of capital formation and of industrial production in Japan -- different, that is, from the conceptual heartland of Western theory -- make Tokyo ill-fitted to the conventional lines of theorising on industrial location.[lxvii] Location in the urban area of Tokyo was conditioned by three principal factors that we have briefly reviewed in the preceding pages. First, industry was located here because it was here that proto-industrial production had been carried on for a long time. There was a historical tradition that provided labour and organisational resources. Secondly, leading industrialists tended either to emerge from the commercial world of Edo or from circles close to or indeed within the Meiji regime. Their instinct was to establish industrial facilities close to the source of state power. Indeed, in several cases they bought at highly favourable prices industrial plants founded by the state. Thirdly, as is suggested by the list of factories located on the east bank (Tables 4 and 5), the majority of companies were producing goods for the local, Tokyo market, especially in the early industrial years. What is more, many of the larger companies started life supplying equipment to the military. It is principally with the advent of the First World War that Japan became a major exporter, and even then, industry in central and east-bank Tokyo was for the most part too small in scale and too closely tied into the urban market on its doorstep to look beyond the imperial capital.

Within the city itself, at a smaller, intra-urban scale, a largely predictable array of centrifugal forces conditioned the movement of larger plants in particular to peripheral locations.[lxviii] Above all else, factories located close to waterways. A waterside location was

crucial to industry, not only for reasons of transport but also for a varied and changing litany of reasons from power supply to the disposal of effluent.

The waterways were central to the commercial prosperity of a number of Japan's largest cities, especially of Osaka but also of Tokyo.[lxix] In the case of Edo/Tokyo, its location at the head of the country's largest expanse of flat land had contributed early to the development of riverine traffic, as had the construction of numerous artificial waterways.[lxx] Many of these water-borne goods made their way to quayside markets in Honjo, Fukagawa and other eastern parts of the city, mentioned earlier in this paper. The city was also provisioned from Osaka and the west by boats that moored in the bay, from where their cargo was transferred onto smaller craft, which in turn pulled into the busiest quays immediately adjacent to the centre of the city. The quays of the central city did not survive long into the new regime, but the waterways of the east of the city remained vital transport arteries both for foodstuffs, household essentials and industrial goods (Table 7). The shift from water-based transport to land-based transport was not a smooth, uni-directional one, and for a long period both were used simultaneously. involved a long period of dual use.

-- Table 7 about here --

When railway lines were built, stations (such as Ryōgoku and Sumidagawa stations) were located by the river or by waterways in order to facilitate the onward transport of goods that had been carried to the city by boat (or in some cases by rail to be shipped on into the city by boat). For example timber made its way downriver from mountains to the northwest of the city. The interlocking of rail and boat transport for most of the first half of the twentieth century was central to the circulation of goods (Table 7). Even the number and use of ferries increased for a period in Tokyo.[lxxi] Eventually, of course, land-based transport replaced water-borne transport. This happened first for people, with the advent of electric trams in 1903 cutting into demand for the 'one-penny steamers' (*issen jōki*) and the 'fast boats' (*hayabune*) that plied the rivers and waterways of Tokyo.

If water was one of the main elements that shaped the industrial landscape of Tokyo, land was, inevitably, another. Available land was relatively plentiful in the northeast of the city, and, being prone to flooding, it was cheap, although not significantly cheaper than in other outer wards. Differences in the labour market in different parts of the city are hard to gauge, and it would therefore be difficult to ascribe the industrialisation of the east bank to significant differences in the availability of labour. Besides, the employees of the textile mills were nearly all in-migrants to the city.[lxxii] At the same time, at the change of regime, the east bank had a high proportion of residents, whether samurai or artisans, who had no home province to return to and who, being needy, were prepared to adapt their skills to the demands of crafts-based manufacturing.[lxxiii] From this base, however, the speed of growth of the population of Honjo and Fukagawa wards is remarkable.

Finally, it is worth emphasising at this juncture that no specific measures existed that can be thought of as involving state planning for industry. It was only in 1919 that land use zoning was introduced in Tokyo, but the zones that were designated served to reflect rather than deflect current land use. The 1923 earthquake provided a more significant opportunity to introduce radical planning measures; the resulting straightening and widening of roads changed the landscape of the east bank and led to the relocation of some smaller factories to immediately adjacent areas in Minami Katsushika County. Yet here too the process was conditioned by decisions made by individual factory owners, and it was not a case of actions taken in response to planning priorities.

Conclusion: providing for the urban market

We return in conclusion to the three strands that were set out at the start of this paper. The first concerned the highly diverse base in crafts-based production and proto-industrial activity that already existed on the east bank of Tokyo's Sumida River, as it did in several other more central parts of the city, during the centuries of shogunal rule. Secondly, the very diversity of proto-industrial activity encouraged first an intensification of the process of urbanisation and later an extensification, as factories moved outwards from the original 15-ward urban area. The spreading out that took place, especially after the Great Kantō Earthquake of 1923, occurred in a pattern that showed little change from what had gone before. The third strand relates to the lack of planning controls on the process of industrial urbanisation. In no sense was industry directed, steered or otherwise manoeuvred into locating in specific zones as a result of government planning directives. The urban landscape that resulted was one of mixed industrial, residential and commercial areas, a multi-functional urbanism that remains a feature of Tokyo and other large Japanese cities today. While it may appear higgledy-piggledy, it is the product of patterns of change with specific roots in the commercial and social systems of Edo and of a related and enduring locational preference for waterside sites.

During the period of most rapid industrial urbanisation, the first two decades of the twentieth century, a few large plants, many of them originally government establishments, were surrounded by a rapidly increasing number of small and micro plants. Many of these factories, especially the smaller ones that were bound into the *tonya* system of wholesaler-managers, relied on the urban market for their sales. They were making goods for local urban consumers, not even, given the replication of activity in Osaka and smaller urban centres, for a national market. But there was a long history of providing for the urban market, and here the existence of waterways throughout the east and central parts of the city was of cardinal importance.

This is all a long way away from the more deliberate and carefully staged industrial suburbanisation that Lewis, Walker and colleagues write about in the context of North America. We look in vain for pivotal figures -- politicians, property developers and local leaders of various hues -- whose decisions guided the process of industrial growth in places like the North End of Montreal or the suburban industrial districts of Los Angeles like Torrance.[lxxiv] Compared with London or Paris, the shift from crafts-based production to modern manufacturing comes much later and is less prey to international competition. Industry in Tokyo is for Tokyo, and not only is it in the city but, to paraphrase Pahl, it is of the city, part and parcel of the city, playing itself out on the streets as well as being immured behind factory walls.[lxxv] Tokyo underwent a process, not so much of urbanisation or of industrialisation, but of industrial urbanisation. It is in this sense that Lewis' comment that 'Industry does not locate in the city, it helps create the city' is of special relevance to Tokyo. The unplanned growth in the number of small factories and workshops alongside houses and shops has contributed to the creation of the Japanese-style multi-functional, higgledy-piggledy city.

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Table 1: Industrial change in Tokyo and Japan, 1919-29.

	1919	***1924****	***1929***
factories, Tokyo Pref.	4,637	4,619 (100)**	7,481 (161)
factories, Japan	43,949	48,394 (110)	59,887 (136)
factory workers, Tokyo Pref.	177,520	156,566 (88)	185,563 (105)
factory workers, Japan	1,611,990	1,789,618 (111)	1,825,022 (113)
turnover, Tokyo Pref. (¥)	802,318	727,326 (91)	981,855 (122)
turnover, Japan (¥)	6,832,032	6,387,226 (93)	7,415,192 (109)

* 1924 figures for Tokyo reflect the consequences of the 1923 earthquake.
** where 1919 figures represent values of 100.
Source: H. Ishizuka and R. Narita, *Tōkyō-to no hyakunen* (The Hundred Years of Tokyo Metropolis), Tokyo, 1986, 181. Originally, compiled from contemporary statistical tables.

Table 2: Distribution of factories by sector and workforce in the principal industrial wards of Tokyo, 1901, 1911 and 1921.

	textiles		metals & machinery		chemicals		food & drinks		r
	factory nos*	Worker nos	f	w	f	w	f	w	f
wards									
Kyōbashi†									
1901	-	-	20	1097	1	12	5	1779	32
1911	3	91	59	4066	3	40	12	361	76
1921	4	533	69	4846	5	122	11	261	83
Shiba									
1901	-	-	22	1887	-	-	3	754	5
1911	8	204	54	4418	6	226	8	520	16
1921	4	125	86	8429	22	49	9	786	14
Asakusa									
1901	5	173	2	36	2	135	1	10	2
1911	4	211	10	184	4	136	3	41	9
1921	19	59	113	372	23	56	161	165	87
Honjo									
1901	26	2249	22	926	8	282	1	27	14
1911	55	3531	144	4371	56	2096	13	507	56
1921	63	4750	184	6193	77	3303	24	1027	57
Fukagawa									
1901	6	1572	8	560	3	74	19	257	8
1911	6	1605	30	2314	19	1820	22	447	27
1921	15	2820	72	2463	55	2384	23	521	73

* The table only shows factories employing more than 10 persons.
† Printers make up the overwhelming majority of factories and workers in the miscellaneous column for Kyōbashi ward.
Source: *Yearbook of Tokyo Municipal Statistics* (*Tōkyōshi tōkei nenpyō*), 1913.

Table 3: Distribution of factories employing fewer than 10 workers by sector and workforce in the principal industrial wards of Tokyo, 1921.

	textiles		metals & machinery		chemicals		food & drinks		misc		total, all s
	factory nos	worker nos	f	w	f	w	f	w	f	w	factory nos
wards											
Kyōbashi	6	31	100	463	4	15	238	319	150	802	498
Shiba	3	18	87	508	9	11	5	31	29	148	241
Asakusa	19	59	113	372	23	56	161	165	87	273	403
Honjo	91	457	409	1967	65	346	189	260	109	504	1863
Fukagawa	78	327	177	736	62	242	423	394	174	596	914

Source: *Yearbook of Tokyo Municipal Statistics*, 1923.

Table 4: Entries from the *Records of Material on Tokyo Prefecture* (compiled for the Army Ministry from 1872 to 1874).

Nakanogō Takemachi

Named after local Take Gashi [bamboo quay].
In 1872 samurai dwellings and temples were amalgamated into ward.
Households: 211 (3 former military)
Population: 777 (425 male; 352 female) + 119 temporary residents
Products:

pipes	5,400	¥84
wooden instruments	108,000	¥162
umbrellas	720	¥180
tatami straw mats	180	¥90
sliding doors	360	¥150
barrels, etc.	1,440	¥240
metal instruments, etc.	1,200	¥120
wooden box hearths	360	¥240
wigs	360	¥120
candles	270,000	¥1,962
tabi socks	4,800 pairs	¥720
working man's costume	840	¥600
clogs	4,000 pairs	¥252
unrefined *sake*	56 *koku**	¥263

* 1 *koku* = ca 180 litres.

Nakanogō Motomachi

Named because first area to be developed.
Households 231 (7 ex-military)
Population: 901 (442 male; 459 female) + 12 temporary residents
Products:

writing brushes	15,200	¥240
tortoise shell products (hollow)	420	¥240
combs (tortoise shell)	1,800	¥51
hair ornaments (tortoise shell)	192	¥105
wooden combs	6,300	¥151
horn hairpins	18,000	¥36
clogs	8,640 pairs	¥130
working man's costume	720	¥1,170
wooden instruments	36,000	¥43
tobacco boxes	1,800	¥120
chopstick boxes (mulberry)	18,680	¥126
hollow pipes	18,000	¥36
wigs	4,680	¥1,323
unrefined *sake*	32 *koku*	¥150

Nakanogō Kawarachō

Named for the number of tile [*kawara*] makers.
Households: 173 (one noble, 16 ex-military)
Population: 731 (357 male, 374 female) + 112 temporary residents
Products:

tortoise shell combs and hairpins	60	¥300
wooden instruments	120,000	¥120
paper shoe thongs	34,400	¥315
tiles	870,000	¥6,400
bricks	100,000	¥700
clogs	30 pairs	¥100
unrefined *sake*	16 *koku*	¥75

Nakanogō Hachikenchō

Named because only eight shops [*hachiken*] here.
Households: 116 (one noble, two ex-military)
Population: 460 (227 male, 233 female) + 30 temporary residents
Products:

working man's costume	1,080	¥67
tabi socks	7,200 pairs	¥84
umbrellas	1,800	¥90
leather tobacco pouch	720	¥190
tissue paper sachets	360	¥450
combs	18,000	¥81
tortoise shell combs	300	¥95
dolls	13,100	¥150
glove puppets	60	¥40
unrefined *sake*	48 *koku*	¥225

Table 5: Factories with 200 workers and over in east and northeast Tokyo, 1924, arranged by date and by ward/county listed in the *Tokyo Municipal Catalogue of Factories* (*Tōkyōshi Kōjō Yōran*), 1924.

Asakusa Ward

1905	cigarettes	Tōkyō Chihō Senbaikyoku	1,269

Honjo Ward

1923	food	Dai Nippon Bakushu	375
1923	rubber	Mitatsuchi Gomu Seizō	365
1923	tr ma	*kisha seizō* - name not given	706
1923	tr ma	Miyata Kōjō	266
1924	pr ma	Seikōsha	389

Fukagawa Ward

1879	cement	Asano Semento	314
1898	gas	Tōkyō Gasu	250
1923	elec ma	Fujikura Densen	594
1923	tr ma	*kisha seizō* - name not given	203
1924	metals	Tōkyō Seikan	303
1924?	gas	Tōkyō Gasu	282

Kita Toshima County

1879	tex	Senju Seijūsho	1,032
1894	gas	Tōkyō Gasu	289
1904	cig	Tōkyō Chihō Senbaikyoku	588
1909	tex	Tōkyō Keori	1,151
1912	paper	Fuji Seishi	383
1912	tex	Dai Nippon Bōshokuseki	3,283
1917	tex	Nippon Genmō	265
1922	constrn mat	Tōkyō Kentetsu	364

Minami Adachi County

1904	shoes	Nippon Seika	271
1918	tex	Yamato Keori	227
1919	cig	Tōkyō Chihō Senbaikyoku	589

Minami Katsushika County

1893	tex	Fuji Gasu Bōseki	1,389
1902	tex	Tōyō Mosurin	1,414
1904	tr ma	Nihon Sharyō	596
1906	tex	Nihon Sharyō	4,100
1906	tex	Tōkyō Mosurin Bōseki	4,421
1907	tex	Tōyō Mosurin	3,084
1908?	tex	Kanegafuchi Bōseki	2,988
1908	tex	Nissei Bōseki	3,037
1912	elec	Nippon Densen	416
1915	me	Tōkyō Kōzai	354
1916	mach	Hitachi	890
1917	me	Ōshima Seikōjo	436
1920	soap	Kaō Sekken	330
?	soap	Marumiya Shōten	202

Table 6: Factories located in Honjo Ward listed in the *Tokyo City Statistical Yearbook* for 1901 (ten and more workers) according to date of foundation and sector.

Construction materials

1855	co. name: Sato Jinbei **?	tiles	10 workers
1882	Sakurai Naojirō	glass	10
1883	Iwashiro	glass	18
1886	Matsudaira	coke	15
1896	Fukushima Hisakichi	glass	14
1897	Sawada Mutsuo	glass	10
1898	Toyo Glass	glass	215
1901	Mitsume Seikan	glass	49

Machinery and metals

1873	Obata Chūzūjō **?	iron foundry	15
1878	Sekimoto Chūzūjō **?	iron foundry	10
1878	Nippon Tekkō	mm	110
1882	Takeuchi Kinko Kōki	mm	85
1884	Furukawa Yōkōjo **	me	150
1885	Furukawa Zōsenjo	tr ma	15
1885	Yamada Kōjō	umbrellas	12
1886	Koda Kōjō	umbrella frame	13
1886	Nakajima Kōjō **	mm	130
1888	Sakuma Kōjō	umbrellas	11
1890	Miyata Seijūjo	guns	30
1890	Suzuki Tekkōjō	mm	15
1892	Nagase Chūkōjō	mm, foundry	12
1893	Seikōsha	pr ma watches	145
1896	Mitake Chūzōjō	mm	11
1896	Onosawa Kōjō	umbrella frame	10
1897	Kōno Kōjō	umbrella frame	12
1897	Teikoku Denki	elec	15
1897	Amanuma Kōjō	pr ma	12
1897	Tōkyō Kuruma Mokugu Seizō	tr ma	15
1899	Mayu Enpan Kōjō	mm	24
1901	Kisha Seizō gōshi kk	tr ma	115

Chemicals

1876	*kōgyōsha* (public co)	matches	20
1877	Meishunsha * **	soap	11
1878	Seikōsha * **	matches	34
1886	Mitatsuchi Gomu	rubber	107
1887	Kimoto Kōjō **?	matches	37
1889	Kōseisha	matches	43
1890	*sekken seizōjō* (name not given)	soap	14
1892	Hōseisha	soap	16

Textiles

1872	Yamauchi Kōjō	tex	13
1872	Harigane Kōjō	tex	11
1874	Mosurin Yūzen Kōjō dye	tex	12
1876	Mosurin Yūzen Senkōjō	tex muslin	10
1880	Tsuchiya Kōjō	ex cotton	36
1881	Sakao Orimono Kōjō	tex weave	12
1882	Oshima Harimono Kōjō	tex	10
1882	Yanagi Kōjō **	hats	19
1885	Kishida Sen Kōjō	tex dye	31
1886	Kurihara Orimono Kōjō	tex weave	15
1887	Ebisu Kōjō	tex dye	19
1887	Aoki Sen Kōjō	tex dye	70
1888	Kawaguchi Yūzen Kōjō	tex muslin	25
1888	Tanioka Sen Kōjō	moslin	25
1889	Okane Kōjō	tex	10
1891	Yoshida Kōjō	tex knit	23
1892	Matsui Keorimono	tex	43
1892	Horikawa Meriyasu	tex knit	65
1894	Izumi Senbutsu Kōjō	tex dye	24
1895	Mosurin Sen Kōjō	tex dye	12
1895	Azuma Shukumenshoku Sen Kōjō	tex muslin	59
1896	Nippon Meriyasu Seizō	tex knit	78
1897	Ishikawa Kōjō	tex	13
1897	Meiji Seibō kk	hats	80
1898	Tōkyō Gasu Bōseki	tex spin	1553
1900	Nishiyama Kōjō	tex	21
1901	Hokkaidō Kikai Ami	tex spin	49

Food and drinks

1898	Kikai Seibyōjō	ice	27

Paper

1892	Koma Kami Seizōjō	paper	26
1894	Tatekawa Kiri Kami Seizōjō	paper	13

Leather

1870	Sakura-gumi Seihijō * **	leather	16
1901	Tokyo Chōmō Gōmei Kaisha	plumage	13

Key:

* also on lists for 1884
** also on lists for 1890
mm metals and machinery
pr ma precision machinery
tex textiles
tex spin spinning
tex knit knitware
tex dye dyeing
tr ma transport machinery

Table 7: Transport of selected goods to Tokyo by boat* and train, 1917**

	boat	*train*
rice	74,149 tons	399,184
wheat, barley and other cereals	34,437	121,155
salt	65,747	4,108
sake and Western liquors	13,865	77,464
fish and other marine products	44,368	87,206
fruit and vegetables	3,514	74,971
raw cotton, cotton yarn and cloth	194	82,465
paper	36,161	56,147
bricks, slate, and tiles	10,094	118,957
firewood and charcoal	37,344	401,933
coal	1,258,421	753,843
timber	45,079	632,326
stones	41,213	231,966
minerals and ores	40,466	121,857
iron and iron wares	114,814	57,404

* includes goods from Taiwan, Korea, and Sakahlin.
** stations in Tokyo and environs.
Total for movement by boat falling from 3,105,483 tons in 1913 to 2,126,804 in 1917; by train rising from 2,993,299 tons in 1913 to 4,883,905 in 1917.
Source: *Tokyo City Statistical Yearbook*, 1919.

[i] R. Walker and R. Lewis, Beyond the crabgrass frontier: industry and the spread of North American cities, 1850–1950, *Journal of Historical Geography* **27** (2001), 7, doi:10.1006/jhge.2000.0266.
[ii] G. Rozman, Edo's importance in the changing Tokugawa society, *Journal of Japanese Studies* **1** (1974) 96.
[iii] K. Moriya, Urban networks and information networks, in C. Nakane and S. Ōishi (Eds), *Tokugawa Japan: The Social and Economic Antecedents of Modern Japan*, Tokyo, 1990, pp. 97–123.
[iv] For an introduction to the history planning and urban change in Japan, see A. Sorensen, *The Making of Urban Japan: Cities and Planning from Edo to the Twenty-First Century*, London, 2002; and T. Yazaki, *Social Change and the City in Japan*, translated by D. Swain, Tokyo, 1968.
[v] G. Leupp, *Servants, Shophands, and Laborers in the Cities of Meiji Japan*, Princeton, 1992. On the lower level urban classes in Edo, see: A. Ikegami, *Kōki Edo kasō chōnin no seikatsu* (The life of lower level townspeople in late Edo), in M. Nishiyama (Ed) *Edo chōnin kenkyū* (Research into Edo Commoners) vol. 2, Tokyo, 139-226. H. Inui, *Edo no shokunin* (Edo artisans), in M. Nishiyama (Ed) *Edo chōnin kenkyū* (Research into Edo Commoners) vol. 3, Tokyo, 1973, 197–262.
[vi] K. Katsu, *Musui's Story: The Autobiography of a Tokugawa Samurai*, translated, with an introduction and notes, by T. Craig, Tucson, 1993.
[vii] W. Steele, Edo in 1868: the view from below, *Monumenta Nipponica* **45** (1990) 127–155.
[viii] H.D. Smith, The Edo-Tokyo transition: in search of common ground, in M. Jansen and G. Rozman (Eds), *Japan in Transition, from Tokugawa to Meiji*, Princeton, 1986, 347–374.
[ix] E.P. Tsurumi, *Factory Girls: Women in the Thread Mills of Meiji Japan*, Princeton, 1990. J. Hunter, *Women and the Labour Market in Japan's Industrialising Economy: The Textile Industry before the Pacific War*, London, 2003. B. Moloney, Activism among women in the Taishō cotton textile industry, in G.L. Bernstein (Ed), *Recreating Japanese Women, 1600–1945*, Berkeley, 1991, 217–238.
[x] W. Hosoi, *Jokō aishi* (The Tragic History of Female Factory Hands), Tokyo 1980 (1925).
[xi] A. Gordon, *Labor and Imperial Democracy in Prewar Japan*, Berkeley, 1991. S. Hastings, *Neighborhood and Nation in Tokyo, 1905–1937*, Pittsburgh, 1995.
[xii] T. Morris-Suzuki, *The Technological Transformation of Japan: From the Seventeenth to the Twenty-first Century*, Cambridge, 1994.
[xiii] C. Mosk, *Japanese Industrial History: Technology, Urbanization, and Economic Growth*. Armonk, N.Y., 2001, 188, 194. E. Sydney Crawcour, Industrialization and technological change, 1885–1920, in P. Duus (Ed), *The Cambridge History of Japan, Vol. 6: The Twentieth Century*, Cambridge, 1988, 385–450.
[xiv] Morris-Suzuki, *The Technological Transformation of Japan*, 97.
[xv] R. Putnam, *Making Democracy Work: Civic Traditions in Modern Italy*, Princeton, 1993. S. Ogilvie, Guilds, efficiency, and social capital: evidence from German proto-industry, *Economic History Review* **57** (2004) 286–333. F. Schwartz, *Advice and Consent: The Politics of Consultation in Japan*, Cambridge, 1998.
[xvi] P. Waley, Ruining and restoring rivers: the state and civil society in Japan, *Pacific Affairs* **78** (2005) 195–215.
[xvii] K. Fujita and R.C. Hill, Industrial districts and economic development in Japan: the case of Tokyo and Osaka, *Economic Development Quarterly* **12** (1998) 181–98.
[xviii] There is a not insubstantial if by now slightly dated English-language literature on the location patterns of industry in modernising Japan. See for example the following chapters in Association of Japanese Geographers (Ed), *Geography of Japan*, Tokyo, 1980: those by K. Murata, The formation of industrial areas, 246–263, and by S. Ide and A. Takeuchi, Jiba sangyo: localized industry, 299–319.
[xix] H. Ishizuka, *Meijiki ni okeru toshi keikaku -- Tōkyō ni tsuite* (Urban planning in the Meiji period: the case of Tokyo), in Tōkyō Toritsu Daigaku Toshi Kenkyūkai (Tokyo Metropolitan University Urban Research Society) (Ed), *Toshi kōzō to toshi keikaku* (Urban Structure and Urban Planning), Tokyo, 1968, 481–498. T. Fujimori, *Meiji no Tōkyō keikaku* (Meiji Plans for Tokyo), Tokyo, 1982, 219.
[xx] J. Hanes, *The City as Subject: Seki Hajime and the Reinvention of Modern Osaka*, Berkeley, 2002.
[xxi] London was, in the words of David Green, frequently portrayed as a 'city of small masters, the main centre of workshop manufacturing in the country' (p. 26). D. Green, *From Artisans to Paupers: Economic Change and Poverty in London, 1790–1870*, London, 1995. Paris, perhaps even more than London, was a centre of artisanal production. Anthony Sutcliffe, in his *The Autumn of Central Paris: The Defeat of Town Planning, 1850–1970* (London, 1970) wrote that: 'The industries that grew up in the city produced mainly consumer goods to satisfy local demand. There was a strong bias toward finishing trades' (p .146). According to a survey conducted by the Chamber of Commerce, 'less than 10 per cent of Paris industrial production in 1847 was exported from the city' (p. 148).
[xxii] For a review of some of the central issues in industrialisation and labour in China, see E. Perry, *Shanghai on strike: the politics of Chinese labor*, Stanford, 1993. Perry's account of the role played by native-place associations, alongside other types of association, in the context of industrialising Shanghai presents in significant respects a different picture

from that prevalent in Tokyo and Japan. See also, E. Honig, *Sisters and Strangers: Women in the Shanghai Cotton Mills 1919*–1949, Stanford, 1986.

[xxiii] Walker and Lewis, Beyond the crabgrass frontier, 13. See also other papers in the issue, including G. Hise, 'Nature's workshop': industry and urban expansion in Southern California, 1900-1950, *Journal of Historical Geography* **27** (2001) 74-92; and E. Muller, Industrial suburbs and the growth of metropolitan Pittsburgh, 1870–1920, *Journal of Historical Geography* **27** (2001) 58-73. See also R. Lewis (Ed), *Manufacturing Suburbs: Building Work and Home on the Metropolitan Fringe*, Philadelphia, 2004. A. Scott, Locational patterns and dynamics of industrial activity in the modern metropolis, *Urban Studies* **19** (1982) 111–141.

[xxiv] One notes the role of industrialists in the context of Pittsburgh, as related by Muller, *op. cit.*. and in the context of Los Angeles of the role played by planning decisions made by the city council and other institutional forces (Hise, 'Nature's workshop') .

[xxv] Allinson relates a similar process to attract what was in the early 1920s the textile factory of Toyota to the city of Kariya near Nagoya. G. Allinson, *Japanese Urbanism: Industry and Politics in Kariya, 1872–1972*. Berkeley, 1975, 60.

[xxvi] R. Harris, *Unplanned Suburbs: Toronto's American Tragedy, 1900 to 1950*. Baltimore, 1996.

[xxvii] F. Dubost, *La choix du pavillonaire*, in A. Faure (Ed) *Les premiers banlieusards: aux origines des banlieues de Paris (1860–1940)*, Paris, 1991, 185–214.

[xxviii] S. Ide, *Meijiki ni okeru Tōkyō no kōgyōteki tochi riyō* (Industrial land use in Tokyo in the Meiji period [1868-1911]), *Risshō Daigaku Kyōyōbu Kiyō* (The Journal of the Liberal Arts Faculty of Risshō University) **11** (1977), 15–25.

[xxix] On Tokugawa-period Osaka, see J. McClain and O. Wakita (Eds), *Osaka: The Merchants' Capital of Early Modern Japan*, Ithaca, N.Y., 1999.

[xxx] Inui, *Edo no shokunin*.

[xxxi] Ikegami, *Kōki Edo kasō chōnin no seikatsu*, 139–226. Still the best investigation of Tokyo's changing social and economic conditions in the Meiji and Taishō eras is, H. Ishizuka, *Tōkyō no shakai keizai shi* (The Social and Economic History of Tokyo), Tokyo, 1977. Also, K. Kawana, *Jūtaku mondai no tenkai* (The development of housing problems), in Tōkyō Toritsu Daigaku Toshi Kenkyūkai (Ed), *Toshi kōzō to toshi keikaku* (Urban Structure and Urban Planning), Tokyo, 1968, 283–384.

[xxxii] Morris-Suzuki, *The Technological Transformation of Japan*, 96.

[xxxiii] Sumida Ward Office (Ed), *Sumida kushi* (Sumida Ward History), Tokyo, 1959, 719. Sumida Ward Office (Ed), *Sumidaku zenshi* (The Prior History of Sumida Ward), Tokyo, 1978, 679.

[xxxiv] T. Yazaki, *Social Change and the City in Japan*, San Fransisco, 1968. See also K. Wigen, *The Making of a Japanese Periphery*. Berkeley, Ca, 1968. See also K. Wigen, *The Making of a Japanese Periphery*. Berkeley, Ca 364.

[xxxv] R. Ariga (Ed), *Nihonbashi Yokoyama Bakurōchō chōshi* (History of Nihonbashi Yokoyama Bakurōchō), Tokyo, 1952, 182.

[xxxvi] Morris-Suzuki, *The Technological Transformation of Japan*, 79.

[xxxvii] Mosk, *Japanese Industrial History*, 174.

[xxxviii] Katsu, *Musui's Story*.

[xxxix] Yazaki, *Social Change and the City in Japan*, 168; 315.

[xl] H. Ishizuka, *Shihon shugi no hatten to Tōkyō no toshi kōzō -- Meijiki no chizu to tōkei shiryō yori mita* (The development of capitalism and Tokyo's urban structure, as seen from Meiji era maps and statistical material), in Tōkyō Toritsu Daigaku (Ed), *Toshi kōzō to toshi keikaku*, 15–68.

[xli] Mosk, *Japanese Industrial History*, 188.

[xlii] Arakawa Ward Office (Ed), *Arakawaku no seikatsu to fukushi* (Life and Welfare in Arakawa Ward), Tokyo, 1963, 125.

[xliii] Asakusa Ward Office, *Asakusa kushi* (Asakusa Ward History), Tokyo, 1914, 334.

[xliv] Mosk, *Japanese Industrial History*, 194.

[xlv] This was near the city's earlier International Settlement at Tsukiji.

[xlvi] Tōkyō Hyakunenshi Henshū Iinkai (Tokyo Hundred Year History Editorial Committee) (Ed), *Tōkyō hyakunenshi* (Hundred Years of Tokyo), vol. 2, Tokyo, 1979, 705.

[xlvii] Kyōbashi Ward Office (Ed), *Kyōbashi kushi* (Kyōbashi Ward History), Tokyo, 1942, 691.

[xlviii] From his work we learn that carpenters, plasterers and other construction workers formed a large majority of artisans in these years of disruption and re-accommodation. See Ishizuka, *Shihon shugi no hatten to Tōkyō no toshi kōzō*, 31; and also Ishizuka, *Tōkyō no shakai keizai shi*, 47.

[xlix] Tōkyō Hyakunenshi Henshū Iinkai, vol. 2, *Tōkyō hyakunenshi*, 710.

[l] Kyōbashi Ward Office, *Kyōbashi kushi*, 714.

[li] Ishizuka, *Tōkyō no shakai keizai shi*, 73; 94.

[lii] The predilection of manufacturers for an urban base continues today in many inner city areas (although not without some serious problems).

[liii] Mosk, *Japanese Industrial History*, 204.

[liv] Ide, *Meijiki ni okeru Tōkyō no kōgyōteki tochi riyō*. The most authoritative formulation of the morphological history of Edo-Tokyo is that of Hidenobu Jinnai in his 1985 publication translated into English as, H, Jinnai, *Tokyo: A Spatial Anthropology*, translated by K Nishimura, Berkeley, 1995.
[lv] Minami Senju Town Office (Ed), *Minami Senju chōshi: Daiichi Zuikô Jinjô Kôtô Shôgakkô kaikô man nijûgo nen kinen* (A History of Minami Senju: The Twenty-Fifth Anniversary of the Opening of Number One Zuikô Normal Elementary School), Tokyo, 1912, 20.
[lvi] Yazaki, *Social Change and the City in Japan*, 351.
[lvii] So it is written in the Kanebō company history, quoted in Sumida Ward Office, *Sumidaku zenshi*, 683.
[lviii] Sumida Ward Office (Ed), *Bokutō gaishi Sumida* (Sumida: An Unofficial History of the East of the River), Tokyo, 1967, 1058. This is an extremely valuable Sumida Ward Office compendium of local historical materials.
[lix] Tokyo Prefectural Office (Ed), *Tōkyōfu tōkei sho 1890* (Tokyo Prefectural Statistical Yearbook 1890), Tokyo, 1891.
[lx] National Police Agency (Ed), *Keishichō tōkei 1912* (Police Statistics 1912), Tokyo, 1913. 2,988 is the figure given for 1924 in: Tōkyōshi Shōkōka (Tokyo City Commerce and Industry Section) (Ed), *Tōkyōshi kōjō yōran* (Outline of Factories in Tokyo City), Tokyo, 1925.
[lxi] *Fūzoku gahō* (Illustrated Journal of Customs) (Ed), *Shinsen Tōkyō meisho zue* (Newly Selected Illustrated Famous Places of Tokyo), vol. 14, 1969 [1898], 168.
[lxii] Sumida Ward Office, *Sumidaku zenshi*, 683.
[lxiii] Sumida Ward Office, *Bokutō gaishi Sumida*, 960. A number of invaluable conversations between long-time local residents of the Mukōjima and Honjo areas were recorded in 1957, and transcribed and printed in *Bokutō gaishi Sumida*, pages 941–1027.
[lxiv] Ishizuka, *Tōkyō no shakai keizai shi*, 94.
[lxv] Much of the detail presented below is taken from the *Sumida Ward History* of 1959, pages 719-50. The same information is found in the completely revised, later ward history (*The Prior History of Sumida Ward*), as well as in diverse other secondary sources.
[lxvi] The most exhaustive and authoritative account of social conditions among the industrial poor of Tokyo remains: K. Nakagawa, *Nihon no toshi kasō* (Japan's Urban Under-Class), Tokyo, 1986.
[lxvii] For a classic discussion, see Allen Scott's 1982 paper in *Urban Studies* (Locational patterns and dynamics of industrial activity in the modern metropolis).
[lxviii] It is interesting to note, *en passant*, that small manufacturers remained in central and inner city areas right through into the present day.
[lxix] Mosk, *Japanese Industrial History*, p. 74.
[lxx] There is an abundant literature on the waterways of Edo-Tokyo and their importance for the transport of goods, most of it in Japanese. See, for example, M. Suzuki, *Edo no kawa, Tōkyō no kawa* (The rivers of Edo, the rivers of Tokyo), Tokyo, 1978; K. Okajima, *Kindai Tôkyô ni okeru shinai suiun ni tsuite* (Concerning urban water transport in modernising Tokyo), *Jinbun chiri* **41** (1989) 489–511; and especially, Jinnai, *Tokyo: A Spatial Anthropology*. For a more detailed examination of a central quay and market, see J. McClain, Edobashi: power, space, and popular culture in Edo, in J. McClain, James, J. Merriman, and K. Ugawa (Eds), *Edo & Paris: Urban Life & the State in the Early Modern Era*. Ithaca, NY, 1994, 105–131. Mosk is insistent on the central role played by waterways in shaping economic growth and industrial development in Osaka, as well as Tokyo (Mosk, *Japanese Industrial History*).
[lxxi] For a discussion of ferries and water-borne transport of goods in Tokyo, see: P. Waley, By ferry to factory: crossing Tokyo's Great River into a new world, in N. Fiévé and P Waley (Eds), *Japanese Capitals in Historical Perspective: Place, Power and Memory in Kyoto, Edo and Tokyo*, London, 2003, 208-232.
[lxxii] Tsurumi, *Factory girls.*
[lxxiii] Sumida Ward Office, *Sumida kushi*, 718.
[lxxiv] Both Muller and Hise, in their contributions to the issue of the *Journal of Historical Geography* edited by Lewis and Walker, while describing industrial spread in quite different North American urban settings, convey a picture that is both more orderly and structured on the one hand and more clearly shaped by the decisions of powerful individual actors on the other Muller, Industrial suburbs and the growth of metropolitan Pittsburgh; Hise, 'Nature's workshop'.
[lxxv] The reference is to Pahl's famous comment, 'Thus we have some people who are *in* the city but not *of* it (the urban villagers), whereas others are *of* the city but not *in* it (the mobile middle-class of the metropolitan commuter village)'; see R. Pahl, The rural–urban continuum, in R. Pahl (Ed), *Readings in Urban Sociology*, Oxford, 1968, 273.