Eighteenth-century English roads have long been presented as so poor as to have been almost impassable, and historians have pointed to the innovations of those gravelly heroes, Metcalfe, Telford, and Macadam at the end of the century as the first sources of qualitative improvement. In examining elements of the changing transport system which could account for an industrial revolution, they naturally tended to look to new modes of travel, the canal and the railway, and in consequence to relegate roads to a supportive or complementary role in the process of change. Turnpike roads were thus disregarded as true innovations; goods carriage by road seen as prohibitively expensive; stage-coaches noted but under valued; and the total impact of changes in road transport not fully understood.

Over the last 15 years our understanding of these issues has altered radically. Although the conclusions of recent research have not yet been incorporated into the textbook accounts, roads and road transport now figure more prominently in the analysis of the steadier, less discontinuous patterns of growth that seem to have characterized developments up to about 1830, the period of the classic industrial revolution. Improved analysis of the nature and timing of industrial and commercial development from 1700 has opened the way to a more sensitive appreciation of roads and their contribution to change. Turnpikes are now understood to have emerged to relieve roads already being eroded by major growth of traffic, and to have aided the further growth of business and industry. Canals, the conventional transport of early industrialization, did not appear as a completed trunk system until well after 1800, and their staple traffics, the bulky low-value cereals and minerals, were less important to the developing industries of the eighteenth century than used to be thought. In effect, the market for transport services was more specific and segmented than was once believed, and roads competed effectively in many fields of trunk carriage. Put at its most contentious, much of the economic development of the industrial revolution took place without the benefit of either the railway or an integral trunk system of canals.

**Turnpikes and the economy**

This description of the geographical and temporal spread of the turnpike has already pointed to the motivation for innovation. It was above all 'economic', intended to provide relief from inadequate roads: supply-side development was not characteristic of the process. For the bulk of the period - at least until the last bursts of turnpiking in the 1790s, around 1810, and in the mid-1820s - narrowly 'financial' motives, those of the rational investor looking for returns on savings, were not paramount. [4] The trusts were above all the projections of local and regional promoters.
The land (directly through landowners or indirectly through the bench of jps who formed the backbone of local government) was the major component of petitioners in more than half of the cases analysed by Pawson [3]. Local government, via Quarter Sessions, regularly supported trust proposals, particularly for "rural" roads. Urban business 61ites, also 'interested' parties, promoted nearly one-third of petitions. Significantly, waggoners and carriers were signatories of some 10 per cent of Pawson's sample of petitions.

Once established, trusts raised capital by borrowing, increasingly after 1750 in the form of small loans committed in advance of the enactment. Such securities and mortgages of turnpike tolls were valuable conduits for capital in the later eighteenth century. They represented vital, safe, easily-entered and realized assets, which were particularly attractive for the middling range of savers, as Buchanan's study of the Bath area has indicated [5]. Such financial devices enabled the trusts to raise the capital to transform the roads, despite Mrs. Western's scepticism. From Defoe in the 1720s onward, contemporaries consistently indicated the enhanced quality of the turnpike by comparison with ordinary roads. Defoe saw them as 'very great things' by which great things were being done. Arthur Young's *Northern Tour* of 1771 classified more than half turnpike mileage as 'good' to 'excellent' in quality against a fifth of ordinary roads, and only a quarter as 'bad', 'very bad' or 'vile' when three-fifths of cross roads were so described. The Board of Agriculture reporters for 33 counties in the 1790s found two-thirds of turnpikes 'good', 'very good' or 'excellent'. The lines of roads were often altered; in the Pennines, turnpiking adapted roads to gradients suitable for vehicular traffic; and bridges were constructed or improved. The new capital raised by anticipating the toll revenues from growing traffic financed effective advances in road quality [1, 2, 3].

Historians have attempted to measure the gains from the process by analysing movements in the real costs of transport and by the assessment of changes in 'distances' within Britain measured by journey times. Recent studies have assessed long-term trends in travel costs on the basis of rates advertised by carriers and through the official regulation of charges by the justices of the Peace. Their results should be regarded as somewhat tentative. However, they indicate that at least until 1800 the cost of transport was either falling, or at worst was stable, and that turnpiking contributed largely to this change [2, 3, 81. The costs of passenger travel are somewhat harder to assess, but these too suggest long-term decline in fares relative to movements in the standard consumer price indexes, until the trends converged in the early nineteenth century. The evidence of travel times by stagecoach was analysed by Pawson [3] to point to the dramatic convergence of British towns and cities in time and space in this period. Manchester, more than five days from London by the fastest coach in 1660, was half that distance from the capital by 1760, and closer by as much again by 1784. In part these gains were attributable to greater inputs of horsepower and improved vehicle design, but the evidence of costs proves that gains in speed were largely the results of the economic efficiency engendered, created by the turnpike.

An overall analysis of the economic benefits of the turnpikes has been made by Pawson [3]. In addition to the direct gains from reduced real costs and shorter journey times, turnpikes permitted the widening of markets. This was central to the more efficient use of resources on which so much of the growth in this period was based. The integration of previously separate markets also helped to raise agricultural productivity. Farmers were no longer confined to their local markets but could produce on a larger scale for more distant markets. This enabled them to specialise in the products for which their land was most suited. It also contributed to the expanding use of new inputs, such as lime and marl. This increased output and raised rents and this in turn helped push forward the process of parliamentary enclosure [2]. In industry and trade, one gain from better transport was that it became possible to work with lower stocks of raw materials and other goods; another was the more rapid movement of goods, such as cloth, to inland markets and to the ports for export. More speculatively, turnpikes may have enhanced the 'connectivity' or relative accessibility of some towns, thus helping to explain the differing patterns of urban growth in counties such as Lincolnshire and Dorset, and the specific patterns of suburban development in the great cities of London and Manchester [3]. By the early 1800s, when the long distance carriage of staples and the beginnings of a coal- and steam-power-based economy had increased the relative importance of canals, turnpikes had clearly been fundamental to eighteenth-century growth, and remained important until the advent of the railway.

**Road haulage**

Modern researches have indicated that the use of roads for the conveyance of goods and passengers was of far greater significance than was once realized. The improvement of road surfaces was part of a cumulative process of development; it came in response to the need created by the growth of traffic, and then itself stimulated further expansion of the economy. Modern analysis of directories, business records, and newspapers has been able to free historical understanding from the prejudice which once tended to...
dismiss the road traffic of eighteenth-century England as negligible. Road goods carriage grew greatly in scale in the period, and in the density of coverage of the scheduled services, exhibiting significant technical change, even if the exact quantification of these developments remain controversial.

From the first point at which the industrial structure of road haulage can be identified, in the mid-seventeenth century, evidence suggests a three-tier structure. At the top in scale, consistently throughout our period, were the great carriers to London, from whom the heavy demands of scheduling and the need to indemnify users against losses, drew the greatest commitment of resources. Below these were regional carriers, operating on a radius of perhaps 30 to 50 miles. At the bottom, there were the local and feeder services, commonly provided by farmers or small craftsmen as one of several sources of family income [6]. While the evolution of the third tier was vital to the ‘connectivity’ of the system, it was the advance in the number, capacity, and scale of the upper two tiers of professional carriers that was the source of the industry’s growth in output in the years up to 1830.

The measurement of that expansion remains somewhat controversial, although there is broad consensus about methods of analysis and general trends. These recent attempts to measure growth have been based largely upon detailed analysis of directories and similar listings of carrier services. This has enabled Chartres to point to a significant development of the carrier system serving London before 1715, and similar analysis to carry these estimates forward to the later 1830s [6, 8]. An outline of these estimates is presented in Figure 1, differences being attributable to variations in data sets, and to differing judgements about the load factors to be applied to waggons and other carrier vehicles. This extensive eighteenth-century growth was mirrored in the advance of provincial networks analysed by Turnbull, and assessed in the major business study, that of Pickfords by the same author [6, 7].

Part of the problem of measurement lies in the changing techniques of road carriage of goods. On many routes, if not quite all, the period up to 1760 saw the generalized replacement of packhorses by waggon carriage. Waggons themselves exhibited technical change; and from the late eighteenth century, a faster light-parcel service of vans was superimposed onto the basic system of trunk carriage at around 20 miles per day by the great stage waggon (see the illustration). Outside these van services, speeds of carriage probably did not improve much before 1800, but waggon capacities advanced considerably, from around one-and-a-half tons in the mid-seventeenth century to perhaps three tons in 1700, rising to four in the 1760s and reaching six by 1800 [6, 7], thus considerably magnifying growth measured by services alone. At the very top of the trade, carrying was a very substantial business by the standards of the time, comparable with many large industrial enterprises, and firms such as Pickfords, or Russell of Exeter, were by 1800 very distinct from the local and regional carriers who underpinned the system [6, 7, 8].

Recent work has refined our understanding of these services. Carriers such as William Bass of Burton-on-Trent, working the Manchester to London road in the 1760s, conveyed a wide range of agricultural products and other goods to the capital, together with felt hats, metalwares, and his own product, beer [7]. Up to the early 1800s, such carriers were critical to the conveyance of higher-value goods to market, especially textiles. Only when the canal network became a truly integrated system of carriage did ‘fly-boats’ and others come to present serious rivals to some segments of the road hauler’s trade. It was only from 1805, for example, when the Blisworth tunnel completed the Grand Trunk Canal as a through route, that Pickfords abandoned land carriage for a substantial portion of their carriage to London from Manchester [7]. Costs of transhipment were high, and the economy of road haulage sufficient to negate the need to employ waggons only for carriage around the obstruction. The assessment of the carriers’ contributions to transport

![Fig. 1. The differing estimates of the growth in output of carrying services to London.](image)
services thus points very clearly to a wider and more significant role before 1800-10, when the mature canal system invaded some of their market niches [7, 8]. Parallel specialization in carriage also existed between roads and coastwise shipping: war or the fear of war shifted more goods to inland modes of transport, road or canal, as was the case with Wilson & Co's shipments of linen from Leith to Leeds in the 1770s and 1780s [9]. Though there remain doubts about absolute scale, it is clear now that in many areas, carriage by road, river, canal, and coaster were complementary, not directly competitive. Comparisons by volume carried may not always show roads in the most favourable light; by value, their contribution to the carriage of goods both intermediate and finished may often have exceeded that of other modes. Before the era of the completed network of canals, and coal-and steam-based industry, the great road waggons and the fly-van were potent elements in trade and industry.

**Passenger carriage**

If the carrier's wagon was already well established as a feature of the transport system in the 1660s, the stagecoach was still in its infancy, but was to show remarkable growth. Analysing the same directory materials that have helped to raise awareness of road haulage, recent studies have been able to plot the patterns of growth of the coach system. Up to the 1750s, services to London predominated, and inter-provincial links were few. Thereafter, stagecoaches were provided between the provincial capitals as the coaches to London grew in number and appointment, and gradually differentiated their output. From the 1780s, the faster and more regular mail coaches had been added to the system, and changes in coach architecture led to increased carrying capacities, greater ability to sustain higher speeds, and, at least on some routes, to real competition. In addition to these trunk 'inter-city' services, by the 1780s suburban services were being added in London, long before the advent in the second quarter of the nineteenth century of the more intensive urban passenger carrier, the omnibus [6].

Modern research on the stagecoach business has been limited, but it suggests that growth in output averaged perhaps one-and-a-half per cent per annum in the first half of the eighteenth century, before rising dramatically from the 1760s, and growing in terms of passenger capacity rather than extent after 1815 [6]. Coaches able to carry six in the 1740s had been replaced by those carrying eight to 10 late in the century, and by those capable of carrying eight inside and out by the 1810s. As indicated earlier, much of the expansion up to around 1800 seems to have taken place as fares fell in real terms. Measured only by the available stagecoach services, the opportunity for personal travel grew rapidly in the later eighteenth century after a protracted pioneering phase of network development up to the 1740s and 1750s.

More research is clearly required to establish this outline of development with greater certainty and precision. However, it is clear that the transport network available to the business traveller advanced rapidly, and provided in the stagecoach a means of speedy travel and communication at continuously falling cost, representing a probable source of improved business efficiency. At the same time the broad range of coach services which became available also reflected the growth of travel as a consumer good, itself a sign of the rising personal incomes of the middle ranks of society. With the exception of Margate, served by river-boats, stagecoaches underpinned the growth of spas and resort towns in the second half of the century. In advancing communication for leisure and for business it was an important element in the development of the economy and for passenger transport it remained largely unrivalled until the advent of the steam coaster after 1815. Yet, in demonstrating the great potential for passenger carriage, it indicated that the predominance of passengers as the revenue sources for the railways before 1850 should not have surprised contemporaries and subsequent historians. The history of the stagecoach had already established personal travel as both producer and consumer good.

**Conclusions**

Work over the last 20 years has resulted in a considerable reassessment of the quality of the roads and of their role in the industrializing economy. Turnpikes were very clearly a major innovation of the period, both a response to growing traffic pressures and a stimulus to further growth. Road haulage was of great importance to the development of the economy and the demands for its services and those of other modes of transport were more specific and targeted than naive comparisons of transport cost; by road and water used to suggest. And now, to the familiar symbols of personal consumption-led growth in the period - the spa, the teacup, and the printed cotton - we must add that of the stagecoach and the personal travel it provided. Within the limits set by technology, it is clear that road transport could not have sustained the completion of the steam-coal-iron industrial revolution, but it may have been the critical transport element in the cumulative growth which formed its background. Roads and road transport must now be seen as central to our understanding of the economy before c. 1830.

**References**


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