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British transport history: shifting perspectives and new agendas

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British transport history: shifting perspectives and new agendas

Abstract

This chapter is a contribution to the festschrift of Derek Aldcroft, formerly Professor of Economic History at Leicester and Manchester. It offers a retrospective on his contribution to transport history and suggests new research agendas for the subject.

Keywords

transport history, Britain, Derek Aldcroft, communications

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British transport history: shifting perspectives and new agendas

Introduction

It is appropriate that Derek Aldcroft's festschrift should begin with a chapter on British transport for it was this topic that first caught the attention of Aldcroft's fertile mind and established him as a leading scholar of economic history. Although his most recent research work has emphasised human capital, employment, and industrial relations, it was in the field of transport history that Aldcroft's research first flourished. In the quarter century from the early 1960s to the mid 1980s he wrote a flurry of articles for leading journals together with nine authored and edited books on British transport. This chapter will assess Aldcroft's contribution to British transport history, examine how the topic has developed more recently, and suggest some further research agendas that might be addressed by future scholars.

Aldcroft as transport historian

Aldcroft was a key contributor to a golden age of writings on British transport history during the quarter century beginning in the early 1960s, a process facilitated by the establishment of new specialist journals and the availability of the records of the British Transport Commission in the preceding years. Other notable writers during this period included Jack Simmons, Michael Robbins, Ralph Davis, Jim Dyos, Bill Albert, Theo Barker, Baron Duckham, Peter Cain, Roy Church, Terry Gourvish, Robin Craig, John Chartres, Gerard Turnbull, Peter Davies, Gordon Jackson, Philip Bagwell, Gary Hawke, and Michael Freeman. Between them they produced an attractive field of study that blended the enthusiast's thirst for detail

with the scholar's pursuit of general and sustaining hypotheses. As an undergraduate who later came to work in the field, British transport history stood out to me as the most energetic and enticing aspect of our national economic history. The *Journal of Transport History*, from its origins in 1953, provided one of the key outlets for much of this work. Aldcroft's contributions featured regularly in the journal, which included a reputation as a challenging book reviewer. By the 1970s he took a leading role in the editorial group.

The field was made the more engaging by evidence all around of continuing change and development in transport systems. As Aldcroft and Dyos wrote from Leicester on 11 August 1968 in the introduction to their joint volume, 'Today, the last train to be hauled by a steam locomotive on British railways has made the journey from Lime Street, Liverpool to Carlisle and back. It is a reminder that transport history is still being made and we would like to think that this volume will give historical perspective to the far-reaching changes now taking place' (1969b, p. 16). They might equally have mentioned the container revolution affecting shipping, the postwar development of jet airliners, or even space travel that was to achieve the first lunar landing in the following year.

Aldcroft wrote broadly on many topics of modern British transport history, spanning the period from the eighteenth to the twentieth century. He particularly focussed on the railways but also wrote about shipping and road transport, and was a pioneer in the neglected field of aviation history. Favourite themes of his included the impact of war and of government intervention, intermodal competition, the economic efficiency of transport, and the nature of technological change. From this work emerged a number of important historical insights. He compared

government's handling of rail and coastal shipping during and after world war one, contrasting the well planned decontrol of the railways under the 1921 Act with the disorganised and rushed return of shipping to private control that contributed to postwar port congestion and excess tonnage construction (1961a and 1961b). This theme was linked to the issue of road, rail, and shipping competition in the interwar period to account for the sustained depression in coasting (1963). The theme of intermodal relations was maintained with Aldcroft's study of rail and air in the 1930s (1964, 1965), which revealed the ownership dominance railway companies held over the embryonic aviation firms, the impact of which was to foster rationalisation of service provision but not of ownership with many small firms, unable to yield economies of scale, surviving in the industry. He returned to the question of government's role by analysing postwar railway policy, drawing attention to the shortcomings of management by the British Transport Commission and the oscillating approaches of competition and integration by Conservative and Labour governments in the 1960s (1968b).

Questions of economic efficiency have come out strongly in his work on railways (1968a), where he argued that the poor performance in the half century to World War One was partly the result of filling in the network with necessarily less productive lines but also from a managerial perspective that was more concerned with empires than operational efficiency. The poor performance of the railway companies after World War One was attributed to falling revenue as a result of road competition and depression in the staple industries. With high levels of fixed costs it was difficult for the companies to reduce expenditures in line with lower revenues (1968b). Although this explanation appears to be based upon economic factors

external to the companies, Aldcroft again attributes many problems to managerial failure including the late technological shifts from steam to diesel and electric traction (1969a). Aldcroft was somewhat more sympathetic towards shipping managers but doubts whether they were as skillful and persistent as their German counterparts (1968c). His broad criticism of transport management, which was part of his general theme of entrepreneurial failure in the British economy (1964-5), never led him to undertake the close and sustained analysis of British railway management that Chandler (1965) provided for American counterparts; this has had to await the subsequent attention of British business historians as we shall see below.

Besides extending our knowledge and understanding of particular areas of British transport, Aldcroft has demonstrated great deftness in synthesising the work of other writers and presenting it in a succinct and balanced manner (1969b; 1975). British transport history has attracted a vast and diverse literature from amateur and professional historians alike, challenging the skills of the best adapter. Nor has he shied from using and acknowledging the work of amateur historians, 'whose labours have so often been of immense value to us' (1969b, p. 15). At the other extreme, Aldcroft engaged debates over the more technical aspects of transport history including the issue of social saving developed by Fogel (1964). Whilst admitting a high degree of scepticism of the social saving concept, his close understanding of the issues positioned him effectively to contribute to the hail of criticism that followed Fogel. On one celebrated occasion, he criticised one of Fogel's followers for producing an analysis based on slender evidence and fragmentary data (Aldcroft 1972).

In 1974 Aldcroft edited a volume that contained his key articles of the last decade and a half. The highwater mark of his contribution, however, came in the following year with his well-considered survey of British transport in the twentieth century, which employed a wide range of sources and drew carefully upon his accumulated experience and understanding of the subject. It provided a more extensive treatment of civil aviation and brought up to date the coverage of all sectors with a particular focus on the 1950s and 1960s to complement the emphasis of most of his earlier work on the nineteenth and early twentieth centuries. Aldcroft found space for some of the earliest work on the neglected topic of road haulage and a thoughtful account of intermodal changes in the postwar pattern of transport demand. On the negative side, the postwar containerisation of shipping was inadequately covered, and there followed further poorly specified criticisms of shipping management relying heavily upon negative assumptions about personal management and business networks that have since been rigorously challenged. He concluded the book by drawing attention to the historic improvements to transport's infrastructure that had been occurring since the 1960s. A few general survey articles followed together with the two volumes edited with Freeman on eighteenth and nineteenth century British transport. The latter were intended to 'refine, update and expand' (1983, p. ix); Aldcroft's sole contribution, beyond the often demanding task of editor, was in the preface to the first volume. Aldcroft also edited, with Phil Cottrell, Ralph Davis's festschrift in 1981 on the themes of shipping, trade, and commerce but again without contributing his own chapter.

Subsequent developments in British transport history

In the two decades since Aldcroft completed his main studies on transport history there have been many important developments in the subject, broad and narrow, in methodology, and in conclusions. Rather than try and detail each of these developments, which are recorded in regular reviews of the subject, the rest of this paper will focus upon how approaches to the subject have altered since the Aldcroft era and where we might consider further shifts in perspective.

Perspectives

Writers have been drawn to particular perspectives when writing about transport history, notably focussing upon an individual mode, eschewing comparisons with communications, and largely ignoring the multiple vertical layers of the industry. In this section we draw attention to some of the risks and shortcomings associated with these perspectives.

the transport mode as unit of analysis

Much of the postwar boom in transport history has been built around using individual transport modes as the unit of analysis. Thus, most articles have focussed on an individual mode and most books, where multi-modal, have dealt with a separate transport form in each chapter. This is also reflected in the organization of most surveys of the state of transport history (Barker 1993; Crompton 1993; Gourvish 1993; Lyth 1993; Williams 1993). In the pursuit of deepening the narrative of transport history this type of approach appears sensible. This perspective has

also extended to submodal academic specialisation. In the shipping industry, for example, Armstrong is particularly well known for his work on coastal shipping. Such has become the demarcation of modal and sub-modal specialisation and differentiation that Armstrong, for example, has criticised other writers where they do not consider coastal shipping in detail separately from other shipping routes despite the overlap in operators, infrastructure, and vessels (Armstrong, 1995, pp. 113-14). Maritime history is also heavily demarcated between naval and mercantile studies. Whether transport history is best served by further pursuing relatively specialised and self-contained perspectives is a worthy matter for debate.

The manner in which transport has been divided into particular modes has sometimes been inconsistent and poorly justified. For example, pre twentieth century road transport has been frequently analysed separately from modern motorised road transport. This has led to different focusses in the study of road transport that have made intertemporal comparisons difficult. In other words, while study of the pre-motorised period has concentrated on the condition and extent of the roads, the motor vehicle itself, particularly its production, has dominated the modern study of road transport with only limited attention to the road system and hauliers (Scott 1998). This has begun to change more recently with Gerhold's (1996) analysis of the importance of better horses and stage-coach design for improved road transport productivity before 1840 and Scott's (1998) account of modern road haulage. Inland water transport is rarely analysed in association with coastal and overseas transport despite the overlap in services and technology between waterways and coasting. It is suggested here that where modal based discussion is

pursued, forms of transport might usefully be distinguished by the technology of their pathway; in other words by road, rail, water, and air.

The modal approach to most transport history has also generated an imbalanced historiography with shipping and the railways continuing to attract the bulk of studies in the two decades since the Aldcroft era. Indeed, a detailed companion to railway history has recently been published (Simmons & Biddle, 1997) building upon existing bibliographies of the topic and Aldcroft and Freeman's (1985) railway atlas as evidence of the extensive literature in this area. Some of the Cinderella areas have begun to receive more attention recently particularly through the work of Lyth (1993; 1996), Hayward (1989), and Edmonds (1999) on the aviation industry. Commercial road haulage, motor cycles, and bus services, have all received recent boosts to their meagre coverage (Barker & Gerhold, 1993; Koerner, 1995; Scott, 1998; Singleton, 1995).

The limited number of studies that have sought to compare different modes have done so largely from a competitive point of view in the manner developed by Aldcroft. Alternatively, studies of urban transport such as by Barker and Robbins (1963; 1974) and later Aldcroft (1982) have provided some valuable pan-mode perspectives although even here the tendency has been to cover each mode in a self-contained manner. Indeed, rarely have central questions been addressed in a cross-modal way such as the alternative sources of finance, the main technological barriers encountered, or the strategy and structure of different transport firms. Exceptionally, Lorenz (1994) has examined the problems of declining international competitiveness in the shipbuilding and vehicle industries.

transport and communications

Transport and communications go together as means of breaching distance. Transport carries people, goods, and information, while communications is particularly about the transfer and dissemination of information. In spite of the similarities between the two concepts they are rarely analysed together in the historical literature (Scholl, 1998). The major developments in modern transport history - railways, steamships, motor vehicles, and aviation - have all involved the transfer of people, goods, and information, yet the third aspect, information, has received limited attention. Over the last one hundred years we have witnessed the growth of specialist long distance communication systems that only transfer information and not people and cargoes. These have included the telegraph, telephone, radio and, more recently, facsimile and the internet. These communication systems and their economic consequences have received relatively little attention, particularly the postwar developments of facsimile and the internet (Perry, 1997). Given the increased interest in the economics of information, examination of these neglected areas is greatly needed both in terms of the narrative of their development and, more particularly, an analysis of their business and economic implications.

The postwar revolution in microelectronics and information technology has meant major advances in information communication. The spread of satellite networks in the 1960s has provided a much cheaper means of intercontinental communication. The invention in 1962 of the laser has enabled the movement of information through fibre optic cables. This has enabled a great increase in the capacity of networks, better signal quality and provides wideband

infrastructures that can carry a much broader range of communication services. Indeed, digitalisation of transmission systems has enabled a convergence of different forms of communication as a single system can transport voice, data, texts, and images (Capello and Camagni 1993). The most dramatic breakthroughs in communications, the Internet and World Wide Web, originated from computer networking concepts explored by MIT academics in the 1960s. E-mail was demonstrated for the first time in 1972 and by 1994 the World Wide Web had appeared and there existed over 50,000 operational networks on the internet ('Internet Histories'). While the initial developments in computer networking occurred in America, there remains a modern history of its diffusion in Britain and elsewhere to be told, and its emerging economic impact through ecommerce.

a janus-faced industry

Transport history involves a third form of internal division along with modal types and the marginalisation of communications. The transport industry crosses traditional broad divisions of industry type. It is a vertically integrated industry by nature if not in the focus of most of its firms. In the construction and maintenance of its infrastructure and manufacture of its vehicles, transport is a secondary industry; but as a mover of people, goods, and information it is a tertiary or service industry. Such distinctions are important in providing an accurate economic analysis and historical narrative of transport. In the shipping industry we have a broad range of studies on each of these subdivisions in terms of shipbuilding, port activities, and shipowning. Pollard and Robertson's (1979) work on shipbuilding and Jackson's (1983) on ports are particularly well-known along with a plethora of writers on

shipowning. However, in the modern road industry much more has been written about the secondary than tertiary industry. Foreman-Peck, Bowden and McKinley's (1995) recent study of the motor vehicle industry has been well received but continues in the traditional genre of construction not service. Barker's (1987) edited study of the economic effects of motor vehicle transport is a welcome change of direction and has the added benefit of providing a broad international perspective through comparative national studies. By contrast, aviation's focus has been sharply on the tertiary. This might reflect the contemporary concentration of aircraft construction in the United States although this has not always been the case as the experience of the de Havilland Comet and Vickers Viscount in the 1950s shows. Rolls Royce aviation engines continue to be in great demand today. Ritchie's (1997) recent study of the big expansion of British aircraft production from 1935 may be indicative of an emerging change of emphasis in the literature.

Agendas

The last two decades have witnessed some new and shifting research agendas for British transport history particularly in terms of broadening the comparative context, advancing economic analysis, embracing modern business history, and extending the subject into new disciplinary fields.

the comparative context

Most of Aldcroft's transport work focussed on British experience. It was set within the broader context of British economic development and analysed

competition between different transport modes. However, international comparisons were not a regular feature of his work, nor that of most of his contemporaries, although he did analyse the impact of foreign competition, particularly German, on British shipping in the late nineteenth century (1968c). From about the mid 1970s there has been a notable expansion of the teaching and research of European studies in British universities, most notably through the growing number of degrees with this focus. This trend has been reflected in the increasing amount of attention to the European experience in economic history. Scholars such as Milward and Saul (1973; 1977) and Pollard (1974; 1982) led the study of comparative modern European economic history in the 1970s and 1980s. This approach has been extended into the study of specific sectors including transport history where a number of collected volumes have brought together work on the transport systems of different European nations. In 1983 O'Brien (1983) edited a series of studies of national railway systems in Europe, which focussed on their economic impact and sought to apply versions, often modified, of the social savings methodology developed for American railways by Fogel (1964) and Fishlow (1965). This European trend has continued in the 1990s with, for example, Kunz and Armstrong's volume on inland waterways (1995), and Andersson-Skog and Krantz's on transport institutions (1999), although both of these manifested some of the unevenness of quality and coverage common amongst conference volumes.

International comparisons involving Britain are much less common beyond Europe, although Armstrong, Bouneau, and Olivares (1998) conference papers on railway management is a noteworthy exception. While geographical proximity and some development similarities often lead scholars to set British experience within

the European context, there is much to be gained from extending this into a wider world, particularly in light of Britain's imperial role and the inevitably cross-national nature of many transport modes. Moreover, the most obvious comparisons, in Britain's case Europe and the United States, are not always the most fruitful. Below it is suggested that for business studies Japan may be a more fruitful context than the somewhat misleading comparisons with United States.

Maritime history, perhaps because of its transnational flavour, has always been more comparative in its focus than other transport modes. This has gathered strength through the 1980s and 1990s particularly as a result of regular conferences, which have attracted scholars from many nations spanning an area well beyond the European confines common for other transport modes. Notable amongst these have been the series of volumes resulting from conferences organised at the Maritime History Unit of the University of Newfoundland focussing upon the riparian nations of the North Atlantic (Matthews and Panting 1977; Ommer & Panting 1980; Fischer and Panting 1985), the annual conference of the Association for the History of the Northern Seas, and the organisation of a maritime history session around a particular international theme at each of the quadriennial conferences of the International Economic History Association (Ville and Williams 1994; Starkey and Harlaftis 1998).

Of course many of these studies have often been little more than a series of chapters on individual nations bound together in a single volume with more or less well-defined common themes and limited explicit comparisons. By contrast, in 1990 Ville completed a survey of transport developments across Europe between the mid eighteenth century and the end of World War One. This study sought uniformity of

approach by looking at common key themes for each transport mode whilst giving greater emphasis to those countries and nations that pioneered new developments. In the following year Szostak focussed his study on a comparison of inland transport systems in Britain and France in the eighteenth century combining his analysis of the different modes although largely ignoring the competition from coasting. The studies by Ville and Szostak, while more closely integrative of transnational experience, represent little more than broad surveys of a vast international literature. What is required now are international studies that focus on particular question in an integrated manner. McKay (1976) pioneered such an approach with his study of urban transport across Europe but few have followed suit. By setting studies more firmly in an international and comparative context it can help us answer questions about the timing of the rise or fall of transport modes. Crompton, for example, has called for more comparative work on the use of inland waterways in order to understand the relatively early decline of this form of transport in Britain in contrast to its late nineteenth century revival in some continental European nations (Crompton 1993, p. 108).

The comparative, of course, need not be at the international level. Indeed, the work of Pollard (1982) has taught us that comparisons at the regional level, either within or between countries, is one of the most fruitful ways of understanding economic development. While Szostak (1991) attempted to compare national success (Britain) with failure (France), doubtful national generalisations are avoided by adopting the recent American perspective of Majewski (1996), who contrasts the stimulus railways imparted to economic development in Pennsylvania with their

failure to displace the traditional plantation system of primary production in Virginia.

advancing theoretical and conceptual approaches

Most of the transport history of the Aldcroft period was firmly grounded in empirical evidence. Rightly so, their first requirement was to explain accurately and comprehensively the development of transport systems in a manner hitherto largely unrecorded. The filling in of much of this empirical detail has enabled subsequent writers to look at transport history more analytically and to apply economic concepts and theories more comprehensively, particularly in understanding the sector's significance for national and international economic development.

The main conceptual paradigm applied to transport history during Aldcroft's era was the social savings methodology. This asked how much the economic development of a nation benefitted from a new transport innovation and was more broadly grounded in Rostow's (1960) idea that a leading sector innovation could cause the 'take off' to modern industrialisation in a country. While Rostow emphasised the importance of unbalanced economic development through individual innovations, the advocates of social saving, primarily Fogel (1964) and Fishlow (1965), concluded that the economic impact of the railway, a leading innovation of the nineteenth century, was modest and had been previously overstated. The methodology attracted as much attention as the conclusions. It was an exercise in the counterfactual that estimated the additional costs to the economy of carrying goods by other means in the absence of the railway. An alternative counterfactual model could involve working out which goods would not have been

moved in the absence of railways and thereby calculate the loss to national income in terms of reduced production and trading. Conceivably, this is a more realistic approach although fragmentary freight evidence and assumptions about the competitive structure in transport would still hinder accuracy. Interest in the social saving concept dwindled from the mid 1970s after a decade of extensive debate that concluded, if anything, that the concept provided at best only a partial analysis of rail's economic impact.

Hawke had applied the social savings approach to Britain's railways. Using the year 1865 Hawke calculated that the use of railways for passenger traffic yielded a saving equivalent to between 1.5 and 6 per cent of national income depending upon whether a reduction of travelling comfort was deemed acceptable. Hawke looked at freight traffic separately and estimated a saving of about 4 per cent of national income. He additionally accepted that the social savings approach provided only a partial examination of the economic impact of the railway, and added to this an assessment of the beneficial external economies of the railways in the form of induced cost-savings and growth-inducing secondary effects to other industries (Hawke, 1970). Foreman-Peck revisited the question in 1991 asking the alternative question, how much higher would national income have been if the performance of the railway system had been better. His reworked social savings calculations for 1865, 1890, and 1910 led him to conclude that, 'railways were as important to the late Victorian economy as contemporaries thought, and call into question Fogel's claim that railways were only essential in economies like Mexico or Spain where water was scarce' (Foreman-Peck 1991, p. 90).

The social saving methodology has never been applied extensively to other transport modes despite occasional case studies (Jones 1986), probably because it was only the railway that was entirely novel, unlike new forms of road and water transport, and therefore viewed as a potential leading sector. Moreover, the railway appeared to be linked, forwards, backwards, or laterally, to almost all key development areas of the nineteenth century and therefore fitted Rostow's idea of spreading effects or, perhaps, what 'new growth' economists might now call spillovers. In fact Rostow's leading sector approach appeared to muster as much, perhaps more, support than Fogel's counterblast in the last two decades (O'Brien 1983; Ville 1990). The twentieth century Rostowian equivalent for transport novelty has been aviation but no one has argued for its central place in national economies, perhaps because it has never replaced the ship as the main international cargo carrier and has required comparatively limited infrastructure. The aeroplane's role has, perhaps, been the less quantifiable one of extending the managerial reach of emerging multinational enterprises and facilitating long distance cross-cultural communication; themes that have received less consideration.

The study of the shipping industry's developmental role has focussed upon its ability to absorb large and rapid increases in demand through productivity improvements. The enormous growth of international trade, particularly from the mid nineteenth century, as part of the development of an international economy was the cause of this heightened demand for shipping. Various attempts have been made to measure the rate of productivity improvement with different results. Equally, there is no agreement as to whether the sources of productivity were mostly organisational or technological (Harley 1988; North 1958; Ville 1986; Walton

1967). However, unlike the disputed role of the railway, there is consensus on the proven ability of shipping to transform itself in response to sustained increases in demand and through this play a central role in international economic expansion. In other words, strong productivity gains in shipping led to a declining freight factor and thereby encouraged international trade and specialisation.

There has been less effort devoted to an economic analysis of the role of road and air transport in industrial development. Towards the end of Aldcroft's period of transport history Chartres (1977) and Turnbull (1977) provided a more positive interpretation of the role of road transport in the early British economy. They reinterpreted the evidence of roads being in poor condition as indicative of extensive useage rather than the reason for limited useage in the first place. Although their estimate of sustained annual growth rates of traffic of 20 per cent has been reassessed at less than half that figure, the role of early road transport has been significantly upgraded (Gerhold 1988). Limited assessment of the economic effects of the modern vehicle industry has much to do with concentration upon the construction side of the industry as we saw above.

Economists frequently think of transport as an important component of an economy's social overhead capital. Transport fits quite closely some of the key features of social overhead capital, notably that it is capital formation that supports a wide range of other economic activities, it is frequently initiated by public authorities and their agents, it is non-importable, and it has technical indivisibilities and high capital-output ratios (Hirschman 1958, pp. 83-4). The match with these characteristics varies according to time and place. Britain's historical experience suggests that its supporting role and its indivisibility are the two principal

characteristics of its transport system (Hawke, 1981, p. 227). Hirschman's work, although written nearly half a century ago, provides one of the clearest explanations of where social overhead capital fits into the process of national economic development. His two-sector model of unbalanced growth sought to explain from which sector, social overhead capital (SOC) or direct productive activities (DPA), came the main driving force for economic growth. His general conclusion, that social overhead capital tended to follow rather than lead, may not have been the answer transport advocates were seeking. However, his study was not based upon wide empirical investigation and clearly social overhead capital, in the form of transport infrastructure, sometimes has been built ahead of demand from directly productive activities. While several writers have hinted at the value of this type of analysis, it has rarely been employed by transport historians (Hawke 1981; Freeman 1988; Ville 1990).

The supporting nature of transport capital raises questions about private and public benefits of such investments. Whether the result of government or private initiative, most transport investments have public good elements to them, particularly in terms of non-excludability and the risk of free-riders. Thus, a new rail line is likely to raise land values in the area and provide a broader and cheaper variety of goods. These social returns are some of the major long-term benefits of transport and yet if the social returns squeeze out private returns this will discourage transport investment, at least in the non-collective sector. The establishment of turnpike trusts to levy tolls to repair decaying roads is one example of where the public goods features of transport had led to market failure as a result of free-riding (Crafts 1994, p. 57). Likewise in shipping, where improved coastal

navigation, such as lighthouses and markers, was financed by levying shipping dues.

The other way in which economists categorise transport is as a service industry. Unfortunately, this has provided us with much less conceptual guidance since the non-storable, intangible nature of services makes them difficult to fit into many key streams of economic thinking such as theories of value and marginal utility (Evans 1993).

The opening chapter of Ville (1990) suggested additional forms of theory used by transport economists that might be usefully operationalised by historians. For example, trans-shipment points and isotims help us to understand the likely relationship between industrial location and transport services. Simple analysis of the cost functions of different transport modes can help us to understand the extent of competition and complementarity between different modes; thus shipping has the highest fixed but lowest variable cost and road haulage the reverse. Szostak (1991) developed a thought provoking flow diagram that sought to show how transport improvements such as the lower cost, greater speed, reliability, and professionalism impacted upon the British economy. France is used as a control experiment; a less effective transport system delayed industrial modernisation. In spite of some of the structural and evidential shortcomings of this study, it provides new methodological groundwork for others to improve upon and develop. Unfortunately, none of these avenues suggested by Szostak and Ville's work have been considered worthy of detailed attention by transport historians.

the business of transport

If transport history, after an initial burst of seeking out relevant development theories to support the historical narrative, came to something of a theoretical blind alley, a new direction has been found through important advances in industrial economics and the theory of the firm. The work of writers like Peter Buckley (1983), Mark Casson (1997), Michael Porter (1990), and Oliver Williamson (1987) has proved highly valuable to business historians in the development of a toolkit of useful concepts that can be applied with relative ease to historical experience. These particularly include the role of transaction cost minimisation in the growth of large scale enterprise, the sources of firm competitive advantages, the economics of asymmetric information and its impact on decision-making, and the nature of business networks.

These central ideas have particular relevance for transport businesses. For example, the sector has spawned many of the largest and most sophisticated firms of the last two centuries and thus transaction costs analysis and the nature of competitive advantage are especially appropriate. In the midst of large scale enterprise, inter-firm networks have also been revealed as central to understanding transport business. Much of the new industrial economics has focussed on the role of information in driving successful decision-making and therefore begs the question of how important have transport and communications services been to the provision of such information.

These theoretical advances provide exciting new opportunities that are gradually, if belatedly, being taken up. One important application of these ideas has been Boyce's (1995) study of the role of networks in the British shipping industry in the half century prior to World War One. His argument for the success of informal

trust-based networks that minimised transaction costs has been extended to the interwar shipping industry with Napier's (1997) analysis of the Peninsular & Oriental Group. These studies also link to the growing interest in the relationship between information conveyance and institutional form. While Boyce has argued for the importance of inter-firm relations in information transfer, other historical writers, such as Temin (1991) and Yates (1989) have alternatively suggested that large, well resourced firms are important information disseminators.

The work of Temin and Yates illustrates how transport historians can draw on the empirical work of business historians as well as the conceptual developments of industrial economists in formulating general hypotheses. The history of big business has been an important area of study over the last forty to fifty years particularly in the United States under the influence of Alfred Chandler's seminal work. While transport historians have been somewhat slow to pick out the relevance of new developments in industrial economics, there has been a wide range of studies on the business history of transport.

Chandler's particular contribution has been as an advocate of big business as a transaction cost minimiser and its ability to build up powerful and sustainable sources of competitive advantage. His work has been based primarily upon studying successful large scale American firms since the late nineteenth century (Chandler 1969). One of his key sectors of interest was the American railroad company, a pioneer of modern management techniques and company organisational structure. We noted earlier that studies of Britain's largest railway companies have been slower to emerge than Chandler's (1965) pioneering work on American railways. The pioneering role of railway companies may not have been so

clear cut in Britain although Gourvish (1972) wrote positively of the role of Mark Huish at the London & North Western Railway. Gourvish (1973) went on to show that mobile and capable professional executives with experience across firms and industries dominated the senior management of Britain's railways by the late nineteenth century; 56 per cent of their chief executive appointments (1890-1909) had worked for at least three other companies. Hughes (1992) and Channon (1996) have more recently extended the analysis of British railway management.

The work of Chandler has been less explicitly applied to other transport modes, perhaps because he had little to say on these industries. Nonetheless, shipping and motor vehicles spawned many of the largest businesses of the last century or two, many of whom have now had their histories written. In the shipping industry business history had an early start through the work of the Liverpool school, particularly Francis Hyde (1956; 1967; 1975), Peter Davies (1973; 1978) and Sheila Marriner (1967). This has continued in the last couple of decades with histories of pioneer shipowners Henley's (Ville 1987) and, for the later period, Blue Funnel (Falkus 1990). In the motor vehicle industry Austin and Morris are among the industry leaders in Britain whose histories have been written (Church 1979; Overy 1976). While much of this research has focussed on car production, there has been more recent interest in commercial vehicle producers such as Albion and Leyland (French 1994; Burnham 1995).

Chandler's (1990) comparative study of the development of big business in United States, Britain, and Germany argued that the lesser tendency in Britain to develop large scale enterprises as prime movers in individual industries represented a form of entrepreneurial failure associated with the survival of personal

management. This judgement has been extensively challenged by other writers who believe that smaller, sometimes linked, enterprises served the needs of the British economy quite effectively (Berg; Rose). Some of these debates have been specifically played out in relation to the changing fortunes of the British motor car industry. Lewchuk (1986) argued that the short termism of British personal capitalism meant low levels of retained profits before the Second World War. Church (1994) disputed such evidence and noted that slower income growth, fluctuating government policies, and lack of industry rationalisation were contributory factors to any problems. The work of Boyce (1995) and of Burnham (1995) helps us to understand how inter-firm rather than intra-firm strategies could be successful in Britain. Their work, however, is predominantly concerned with groupings around the leading companies; we know much less about the management of smaller transport enterprises particularly in areas such as road haulage and coastal and inland shipping. The emerging paradigm for Japanese business has also stressed inter-firm cooperation (Fruin 1992); future transport studies may benefit from comparisons with Japanese rather than American companies.

Explanations of the rapid growth of multinational business over the last century and a half have been dominated by the OLI (ownership, location, internalisation) investment theories and specifically Dunning's (1993) eclectic paradigm. However, changing transport provision also impacted on the growth of international business from the second half of the nineteenth century. Wilkins (1977) argued that the growth of European multinationals in this period can be traced to the shortening of distances by railways and steamships. The reasons for multinational expansion at this time have generated much debate. Even if improved

transport efficiency was not the principal explanation, it nonetheless contributed indirectly. This derives from the communication benefits generated by improved transportation enabling better transfer of technologies, more effective monitoring of employees and reduced uncertainty regarding conditions in overseas markets. Against this, however, it can be argued, that improved transport services can facilitate international business in the form of exporting and thus reduce the need to go multinational.

Another strand of scholarly development has been accounting history, reflecting the boom in accounting and finance studies in the post-Aldcroft era. The search for the modern origins of cost, capital, and financial accounting, and the role of management accounting in developing firm competitive advantage has generated a growing volume of academic output and new journals such as *Accounting History* and *Accounting, Business, and Financial History*. As a sector generating many large, geographically distended, and capital intensive firms, accounting techniques and their role in evaluating performance and extending corporate control must be of much interest to transport historians. Amongst a growing literature the work of Arnold (1995, 1996), and of McLean (1995) on accounting in maritime history are particularly worthy of mention. Arnold (1995, p. 115), in particular, sets the scene for extended labour by maritime historians by concluding that, properly adjusted, the pre-1914 financial accounting statements of many companies can provide very valuable data.

beyond the boundaries of economic analysis

Aldcroft and his generation of writers saw themselves as writing transport history as a specialist sub-discipline of economic history that also extended into business and labour history to some degree. This has largely continued to be the perimeters of most transport history until today and is also reflected in literature reviews of the subject that tend to eschew a broader more interdisciplinary view (Armstrong 1995). A notable early exception was the work of Schivelbusch (1980), which connected the railway to broader forces of social and economic change in the nineteenth century. In addition, some of the research from the group of maritime historians at the university of Exeter, particularly of Stephen Fisher (1994) and David Starkey (1988), has provided a broad interdisciplinary approach to maritime history, which engages areas of study such as tourism, marine biology, climate, exploration, and psychology.

In an excellent recent addition to transport historiography Michael Freeman (1999) criticised the mainstream literature on railway history for its, 'discursive insularity' and called for transport history to be more clearly located within its cultural milieu. With the revival of cultural studies within the history profession this is a timely observation. Freeman notes that the building of the original railway system in Britain coincided with fundamental reform of the political franchise and the emergence of modern biology under the influence of Charles Darwin. Indeed, the complex process of railway construction not only impacted on financial and labour markets but its excavation threw up significant new fossils as Darwin's friend Hugh Strickland discovered when he was run down by a train while 'geologising his way through the railway cuttings' (Freeman 1999, p. 161). In the twentieth century, the motor car has had a strong cultural role. Generally, it has had more

favourable connotations of freedom and adventure, a distraction from a dull existence for ordinary people. Less desirably it is also connected with male auto-erotic fantasy and ownership of women, themes taken up in a recent study (Thoms, Holden and Claydon 1998).

Accompanying the revival of cultural history has been the heightened appreciation of the important role of culture within economic institutions. Corporate culture in particular helps provide answers to issues often insensitive to traditional forms of economic and business analysis. A firm with a positive and well-defined corporate culture can hope to attract like-minded recruits and draw upon higher levels of motivation and loyalty. Often the value of corporate culture is most evident in its absence. Church (1996) has recently shown how a poor corporate culture at Morris led to mistrust and internal strife that carried over into the British Motor Corporation after merger. Pilkington (1996) addresses the important question of cultural clash between organisations, which he uses to explain the limited effectiveness of the joint venture between Rover and Honda in the 1980s.

New forms of transport also impacted upon contemporary arts, most famously in Turner's 'rain, steam and speed' painting. The imagery of the railway affected the human psyche in many ways, for example the construction of tunnels was viewed by some as descending into the underground satanic world. Daniels (1985, 1993) has provided analysis of this imagery particularly in relation to the railways but a lot more could be done especially for other revolutionary changes in transport provision. In a similar fashion the architecture of transport, often grand, can also be analysed as a source for a closer understanding of the impact of transport on contemporary culture. Many of Victorian Britain's most grandiose

structures, symbolising the power, wealth, and confidence of the nation, were part of the transport system including Brunel's bridges such as the Royal Albert at Saltash, and notable stations like London St Pancras and Bristol Temple Mead. This evidence can be tied back to the economic and business history of transport for the message it sends about policy priorities. Channon (1972) has shown how the extravagant London terminus of the Midland Railway was a symbol of the company's power status and sent a message of its independence to the other companies. Carter (2000) has recently confirmed the impact of the railway on contemporary fiction. Shipping has long been a favoured subject of painters and, in the twentieth century, the motor car an icon of photography and graphic art. The overlap of art history and economic history in the 1990s in the analysis of historical art markets provides a timely opportunity to extend the coalescence further into transport history (Ormrod, 1999). It would be interesting, for example, to understand the reasons for consuming works on transport subjects in competition with portraiture and other landscapes.

The advance of gender studies provides a further cross-disciplinary opportunity. Margaret Walsh's (1996) study of the role of women in the American bus industry reminds us that transport has not been an exclusively male area of employment. Women are strongly represented in the modern service sector in areas such as banking, tourism, and education. Transport is one of the oldest and largest service industries and therefore further evidence of the nature and extent of their role in Britain would be a worthy area of research. A recent conference ('Transporting gender') and the forthcoming publication of its main papers (*Journal of Transport History* 2002) suggests gathering progress in this area. The employment

of women in the airline industry is an area requiring some attention given their importance as travel agents, airport staff, and onboard stewards. Accompanying gender, ethnicity remains very much a cinderella topic with a few notable exceptions mostly dealing with the manning of British ships by Lascars and other non-Europeans (Dixon 1980; Frost 1995; Creighton and Norling 1996).

Finally, it should also be noted that there is a growing interest in the public history of transport. Transport's claim to public space throughout history is perhaps stronger than any other sector of the economy. Such interest is particularly reflected in the energies of transport museums around Britain. Transport history is especially blessed with a proliferation of museums, which provide a valuable interface between academic research and a broader public interest. While the National Maritime Museum has long played this conduit role, it has more recently spread to other transport modes, for example through the work of scholars at the Institute of Railway Studies (Divall 1999; Divall and Scott 2001).

Conclusion

In his recent analysis of the current state of transport history, Armstrong subtitled his article, 'the rise of a topic to maturity'. While mature it certainly has, there persists a certain insularity that continues to hinder the broader relevance of the subject. Transport is an area of great interest to many who see this as an end in itself and often make limited efforts to relate it to wider debates and discussions in economic, social or other strands of historical study. This problem is recognised by some of its most astute practitioners. Frank Broeze (1995, p. xviii), in a recent

survey, went as far as to suggest that maritime history is frequently regarded from outside as a closed shop and that the subject now stood at a vital crossroads. As we reflect broadly on new directions for a new millennium, bringing transport history more in to the mainstream of the various disciplinary areas it breaches would do much to tackle the accusation of insularity and modernise its outlook.

This chapter has assessed Derek Aldcroft's contribution as a postwar pioneer of the study of British transport history, identified the manner in which the subject has developed in the two decades since, and suggested ways in which this process might be further extended. Some of these future agendas are identified with a view to move the subject firmly into the mainstream as suggested above, particularly grasping more firmly the importance of comparative work, both between modes and geographic areas, embracing and challenging more directly paradigm shifts in bodies of theory, and seeking out new disciplinary areas of interest to which the transport sector can contribute. It is hoped that future generations of historians will pursue such new agendas with the enthusiasm and professionalism of Derek Aldcroft and his contemporaries.

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