



EUI WORKING PAPERS IN HISTORY

EUI Working Paper HEC No. 95/2

**XIX and XX Centuries Transport History
Current Trends and New Problems**

**A workshop organized by
ALBERT CARRERAS,
ANDREA GIUNTINI
and
ANDREAS KUNZ**

NP
940
EUR

European University Institute, Florence

EUROPEAN UNIVERSITY INSTITUTE



3 0001 0022 0745 6



EUROPEAN UNIVERSITY INSTITUTE, FLORENCE
DEPARTMENT OF HISTORY AND CIVILIZATION

EUI Working Paper HEC No. 95/2

XIX and XX Centuries Transport History
Current Trend and New Problems

A workshop organized by
ALBERT CARRERAS,
ANDREA GIUNTINI
and
ANDREAS KUNZ

WP 940
EUR



BADIA FIESOLANA, SAN DOMENICO (FI)

**All rights reserved.
No part of this paper may be reproduced in any form
without permission of the authors.**

**© Albert Carreras, Andrea Giuntini and Andreas Kunz
Printed in Italy in November 1995
European University Institute
Badia Fiesolana
I – 50016 San Domenico (FI)
Italy**

FOREWORD

We have collected in this volume the proceedings of the Workshop on transport history held at the European University Institute the 20th May 1994.

The funding for the meeting came from the research project on *The second technological revolution and the economic growth of Europe: the role of networks* supported by the Research Council of the EUI.

We thank all the participants in the Workshop for their comments and contributions to the discussion. We also thank very much the extremely efficient help of the History Department secretarial staff: Antonella Livreri, Angela Schenk and Kathy Woolf Fabiani. Michael Goerke spent a lot of time teaching us the new computing technologies.

A.C.-A.G.-A.K.

Table of contents

Foreword A.C./A.G./A.K.	p. 3
Forty Years of Transport History: Achievements and Prospects John Armstrong	p. 7
L'Association pour l'histoire des chemins de fer en France Marie Noëlle Polino	p. 12
Inland Transport and European Economic development in the Nineteenth Century. The Case of Inland Waterways Andreas Kunz	p. 28
Histoire des transports en France (XIXe-XXe siècles). Quelques repères bibliographiques Michèle Merger	p. 34
Italian Transport History: Recent Developments Andrea Giuntini	p. 40
L'histoire des routes à l'époque de la motorisation Lando Bortolotti	p. 43
Transport History and the Location of Economic Activity Albert Carreras	p. 46

Le rôle déterminant du rail dans la genèse des bassins industriels. Le cas de la Haute-Silésie au 19e siècle
René Leboutte

p. 50

Transport History and the Use of Portable Geographical Information Systems
Alberto Schram

p. 57

The Railways in Italian Africa
Stefano Maggi

p. 60

Some comments on German Railway Projects in the Ottoman Empire, 1890-1918
Hilmar Kaiser

p. 63

Italy and the Transiranian Railway
Andrea F. Saba

p. 69

Regulation of urban public transport in Rio de Janeiro and São Paulo (1870-1930)
Katia Martinez

p. 71

John Armstrong

Forty Years of Transport History: Achievements and Prospects

This introductory paper outlines the main achievements in the field of transport history over the last forty years, essentially in the English language and mainly relating to the nineteenth century, and by so doing identifies some continuing gaps in our knowledge, and hence suggests a tentative research agenda for the future. The theme is that transport history grew strongly in the late 1950s and early 1960s, reached an apogee in the early 1970s, went into a slight decline in the 1980s, and has plateaued since then.

The first area of achievement in transport history I wish to identify is cliometrics or the “new economic history” of which Robert Fogel's volume on railroads and economic growth in the early 1960s was seminal¹. Both its methodology, social savings and the counterfactual, and findings, that railways were not as significant in promoting US economic growth as previously believed, were controversial and created much debate and a small industry in critical reviews. This element of iconoclasm was important for it stimulated other scholars and post-graduate students to move into the area to carry out research in railway and transport history².

Business history was another significant aspect. Alfred Chandler jnr's work on *Strategy and structure*, which also came out in the early 1960s, initiated another research agenda³. He assigned a prominent role to the railways in America, unlike Fogel, in creating a national market from a series of regions, and so bringing about the conditions for firms to develop the

1 R.W. Fogel, *Railroads and American Economic Growth*, Baltimore, 1964.

2 G.R. Hawke, *Railways and Economic Growth in England and Wales 1840-1870*, Oxford, 1970; P.K. O'Brien, *The New Economic History of the Railways*, 1977; E. Jones, *A transport private saving calculation for the brewers Truman Hanbury & Buxton, 1815-63*, “Journal of Transport History”, 7, 1986.

3 A.D. Chandler Jr, *Strategy and Structure: Chapters in the History of the American Industrial Enterprise*, Cambridge Massachusetts, 1962; idem, *The railroads as pioneers in modern corporate management*, “Business History Review”, 31, 1965.

multidivisional company structure. In addition, in their own right, railways were among the earliest large scale businesses and hence faced problems of how to organize and manage themselves. Chandler's work inspired much comment and criticism and sparked off studies on both sides of the Atlantic, such as Gourvish's work on Mark Huish and Irving's on the North Eastern Railway⁴. Chandler's message was also important because it reached a wider audience than just the historians; it was taken up by business and management teachers and taught to specialists in organisation studies and practising managers. Thus it had a much greater impact.

A third area of controversy was that of the state of British roads in the period of Industrialization. Until the 1970s the argument was that the roads were so poorly maintained that they were little used; mud, ice, steep gradients and potholes combining to deter any but the most determined or foolhardy traveller. In addition, it was argued, the turnpike roads were little improvement because they were not built as a national system, but rather were a result of local initiative and did not inter-connect to provide through routes. Two young scholars, both from the University of Leeds, turned the first part of this thesis on its head⁵. They claimed that the reason for the roads being in such a poor state and causing complaint was that there was so much traffic that it churned up the roads. They backed this up by estimating rapid growth in the capacity of the road transport system over a long period. From local directories they listed the carriers who called at each inn, their frequency, destinations and starting points. Thus they could calculate the aggregate carrying capacity of a stretch of road at several dates and measure the resultant growth rate. The second salvo was fired by two other scholars who showed that the various local stretches of turnpike were built to accommodate through traffic, which was then charged to use the road, whereas otherwise they had free use of them⁶. They also showed that by 1770 there was a national system inasmuch as all the local initiatives had added up to the main

- 4 G. Channon, A.D. Chandler's "visible hand" in transport history, "Journal of Transport History", 2, 1981, pp. 53-64; T.R. Gourvish, *Mark Huish and the London and North Western Railway*, Leicester, 1972; R.J. Irving, *The North Eastern Railway Company 1870-1914*, Leicester, 1976.
- 5 J.A. Chartres, *Road carrying in England in the seventeenth century: myth and reality*, "Economic History Review", 30, 1977; J.A. Chartres, *Internal Trade in England 1500-1700*, 1977; G.L. Turnbull, *Provincial road carrying in England in the eighteenth century*, "Journal of Transport History", 4, 1977; G.L. Turnbull, *Traffic and Transport: An Economic History of Pickfords*, 1979.
- 6 W. Albert, *The Turnpike Road System in England 1663-1840*, Cambridge, 1972; E. Pawson, *Transport and Economy: The Turnpike Roads of Eighteenth Century Britain*, 1977.

arterial roads being improved and so speeding up traffic. Thus road transport was rehabilitated as a form of goods transport.

Another area which has been rescued from oblivion was the role of coastal shipping. Even in the mid 1970s the textbooks were mostly mute about it, giving the impression that if the coaster did play a role in industrialization it was not worth studying and that after the railways it went into decline⁷. Recent work has shown that the coastal ship was crucial in the industrial revolution⁸ and that the volume of traffic grew steadily throughout the nineteenth Century so that just before the First World War it was doing as much work as the railways, though in a different way⁹. It concentrated on the long haul whereas the railways carried a larger volume of goods a shorter average distance. Research has also revealed the extensive network of coastal liner companies which connected all of the major British towns with a large-capacity, frequent, scheduled service¹⁰. Thus a little more is known about the importance of the coastal ship as a mode of transport.

Deep water freight rates were another area of disagreement, first surfacing in the late 1950s, and then re-emerging in the late 1980s. Here the debate is not over the trend, falling over a long time period, nor yet its importance in encouraging the movement of bulk goods and creating a world market in them, but rather the extent and causes of the fall, and the degree of similarity between the experience of various routes and cargoes. The topic has inspired a number of studies, though the range of different contributors remains

- 7 For example, C.I. Savage, *An Economic History of Transport*, (1959 and 1966) does not mention the topic; T.C. Barker and C.I. Savage, *An Economic History of Transport in Britain*, 1974 devote two pages out of 250 to it under the heading "steamboats and coastal traffic" in the chapter entitled *The early railway age*. J.H. Dyos and D.H. Aldcroft, *British Transport: An Economic Survey from the Seventeenth Century to the Twentieth*, Leicester, 1969, also allocate two pages to "coastal shipping and ports" out of a total book of 400 pages in the chapter *Railways and the transport system*. P.S. Bagwell, *The Transport Revolution since 1770*, 1974, is the only text to give it reasonable coverage.
- 8 S.P. Ville, *Total factor productivity in the English shipping industry: the north-east coal trade, 1700-1850*, "Economic History Review", 39, 1986; J. Armstrong, *The significance of coastal shipping in British domestic transport, 1550-1830*, "International Journal of Maritime History", 3, 1991.
- 9 J. Armstrong, *The role of coastal shipping in UK transport: an estimate of comparative traffic movements in 1910*, "The Journal of Transport History", 8, 1987; idem, *Coastal shipping: the neglected sector of nineteenth-century British transport history*, "International Journal of Maritime History", 6, 1994.
- 10 J. Armstrong, *Freight pricing policy in coastal linercompanies before the First World War*, "The Journal of Transport History", 10, 1989.

smaller¹¹. It is an on-going area of discussion in which the experience of the coastal trade is also relevant.

Another achievement in the last forty years has been the appearance of a number of reasonably-priced, paperback, textbooks on transport history bringing the latest thinking, normally available only to readers of the academic journals, to a wider readership, such as students and the general public. There were no recent texts in the early 1950s. By 1974 there were three available, all in paperback and each with its individual strengths and weaknesses¹². This was undoubtedly important in giving the discipline a broader appeal and stimulating study and research. The sad feature is that, apart from one honourable exception, they have not been revised or new editions printed since. The one which was reissued appeared only in hardback and the parsimony of the publishers prevented a thorough revision of the text, it had only a new final chapter to bring it more up to date¹³.

A final achievement of transport history in the last forty years has been the plethora of academic journals which have appeared, even if some have not lasted very long. In 1950 there was no journal devoted to the history of transport per se, though there were some publications which catered for aspects of it or for the enthusiast market. In 1953 "The Journal of Transport History" was launched, catering for all modes of transport, in all periods and all countries. Two years later "The Journal of the Railway and Canal Historical Society" commenced and although its name implied a degree of exclusivity, because it also catered for competitors to the railway and canal, such as road transport, ships and ports, it came to have a slightly wider coverage. The late 1960s and early 1970s saw great growth with "Transport History" appearing in 1968, perhaps because the "The Journal of Transport History" had missed a few numbers, with almost the same market and coverage as the "The Journal of Transport History"¹⁴. Then in 1970 there

- 11 D.C. North, *Ocean freight rates and economic development 1750-1913*, "Journal of Economic History", 18, 1958; C.K. Harley, *Ocean freight rates and productivity 1740-1913: The primacy of mechanical invention reaffirmed*, "Journal of Economic History", 48, 1988; C.K. Harley, *North Atlantic shipping in the late-nineteenth century: freight rates and the interrelationship of cargoes*, in *Shipping and Trade 1750-1950. Essays in International Maritime Economic History*, ed. by L.R. Fischer and H.W. Nordvik, Pontefract, 1990; J. Armstrong, *The shipping depression of 1901-11: the experience of freight rates in the British coastal coal trade*, "Maritime Wales", 14, 1991.
- 12 Barker and Savage, cit.; Dyos and Aldcroft, cit.; Bagwell, cit.
- 13 P.S. Bagwell, *The Transport Revolution 1770-1980*, 1988.
- 14 See the "Editorial" in *The Journal of Transport History*, 14, 1993.

appeared "Maritime History", catering for a different sector of the market but increasing the aggregate flow of articles on transport history significantly. By 1974 there appeared to be a number of academic journals in the field of transport history. However 1974 was a high point. The next few years saw the temporary demise of "Maritime History" and "Transport History", their resurrection shorn of the academic editors and scholarly paraphernalia, and then their final demise a few years later. So, by 1980 the "The Journal of Transport History" became again the only comprehensive academic journal of transport history. New launches became rare until, in 1989, the Memorial University of Newfoundland floated a new maritime journal with solid scholarly underpinnings¹⁵. Thus, after a decade of stagnation, there appeared to be gleams of light in the transport history sky.

What this brief Study suggests is that there have been a number of areas of debate and controversy within transport history which have sparked off fresh research, interest and publications. This process is absolutely necessary for the long term health of any academic discipline. Transport history is no exception. The vigour and frequency of these debates was much more muted in the 1980s but some areas have been creating heat as well as light, for instance network analysis, freight rates, the cost structure of the railways, and the role of canals in industrialization. There is a strong base of journals available for publication; to build on this firm academic foundation what is needed is more debates and arguments, preferably which will involve more than just transport historians, and an up-to-date textbook for students and the public.

15 *The International Journal of Maritime History* founded and edited by Professor L.R. Fischer with a distinguished and international advisory board.

Marie Noëlle Polino

L'Association pour l'histoire des chemins de fer en France

L'AHICF se définit comme une “société savante” vouée à l'histoire des transports par fer, des hommes qui les construisent, les exploitent et les utilisent et des multiples aspects de leur présence dans le monde d'hier et d'aujourd'hui et comme un lieu d'information et de rencontre pour tous les chercheurs qui abordent ce domaine.

Fondée en 1987, elle est présidée par M. Jean Bergougnoux, président de la SNCF, et rassemble aujourd'hui environ 400 membres, personnes physiques ou morales, entreprises, centres de recherches, associations, chercheurs venus de toutes les disciplines des sciences humaines, professionnels du rail et amateurs de chemins de fer. Leurs cotisations lui permettent d'assurer ses missions: information du public, subvention et coordination de recherches, diffusion de leurs résultats, par les travaux de ses commissions internes spécialisées, par des colloques annuels et par la publication de la Revue d'histoire des chemins de fer.

Née à la faveur du développement d'un nouvel intérêt du public, depuis plusieurs années, pour l'histoire des métiers et celle des techniques, parallèle à une prise de conscience de la nécessité de préserver un patrimoine technique et d'écrire son histoire, l'AHICF participe également au mouvement qui a conduit de nombreuses entreprises, aux Etats-Unis d'abord puis en Europe, à ouvrir leurs archives aux chercheurs et à souhaiter que les historiens se penchent sur leur passé.

C'est pourquoi elle rassemble principalement des chercheurs venus de toutes les disciplines des sciences humaines et des professionnels des chemins de fer et reste ouverte à toute personne qui souhaite approfondir ses connaissances et participer à des recherches communes sur l'histoire des milieux ferroviaires.

1. Son domaine

L'AHICF s'est donné pour particularité la généralité de ses préoccupations: elle souhaite pour domaine l'intégralité du fait ferroviaire et s'intéresse donc autant aux chemins de fer urbains et régionaux qu'aux liaisons intercitys.

Cette approche globale, autorisée par l'appartenance de tous les chemins de fer à un système technique commun, ne méconnaît pas la singularité de chacun. Nous pensons au contraire que la coordination de travaux divers, monographies de lignes ou d'entreprises, géographie régionale ou nationale des transports, analyses économiques permettent de dégager la spécificité du mode ferroviaire dans sa contribution aux 160 dernières années de notre histoire.

C'est pourquoi l'AHICF inclut dans l'histoire des chemins de fer celle des entreprises qui ont construit infrastructures et matériel roulant autant que celle des compagnies, établissements publics, régies ou administrations qui ont exploité ou exploitent les réseaux. L'histoire des métiers, à laquelle contribue dans toute la France un important mouvement de préservation des anciens matériels, est elle aussi conviée, comme celle de la société cheminote.

Les chemins de fer, longtemps l'un des premiers employeurs de France et d'Europe, sont donc considérés ici dans leur puissance industrielle et financière. La compagnie de chemin de fer n'est-elle pas, pour les historiens d'aujourd'hui comme pour l'opinion contemporaine de leur constitution, le symbole, sinon le modèle, de la révolution industrielle ?

Industrie de transport, les chemins de fer ont été longtemps aussi, sous le contrôle plus ou moins étroit de la puissance publique, le premier "aménagement" de France. L'étude de la constitution des divers chemins de fer en réseau, comme celle de leur actuel fonctionnement dans le cadre d'une mobilité toujours accrue et accélérée des personnes et des biens, restitue leur rôle, renouvelé aujourd'hui avec les lignes nouvelles à très grande vitesse, dans l'évolution de l'espace intérieur. La concurrence tarifaire que se sont livrée les anciennes compagnies a bouleversé la hiérarchie urbaine en modifiant à dessein la destination des produits, en préférant certains marchés, en en créant d'autres, qu'il s'agisse de produits industriels ou agricoles. De même, l'augmentation des vitesses dans le transport des voyageurs apporte

aujourd'hui à la carte de France des modifications tout aussi conscientes et radicales.

Nous devons prendre en compte aussi la façon dont les chemins de fer façonnent les paysages et conditionnent le développement urbain. L'histoire de "l'arrivée" du chemin de fer dans les principales villes de France, en cours avec le soutien de notre association, fait revivre les débats qui ont conduit à des décisions dont les enjeux, sinon les procédures et les arguments, sont encore actuels tandis que leurs résultats sont le point de départ, et la source des contraintes, des projets des urbanistes d'aujourd'hui.

C'est donc par la multiplication des études partielles et des monographies que nous espérons nourrir une histoire globale du monde ferroviaire dans toutes ses implications et dans sa spécificité, par rapport aux autres modes de transport comme par rapport aux autres pays.

2. Ses objectifs

La tâche est à la mesure de l'objet que nous nous sommes donné et requiert, pour son accomplissement, le recours à des méthodes dont l'approfondissement est lui aussi notre objectif.

L'historien des chemins de fer, quelle que soit son ambition, se trouve confronté à deux obligations préalables: la restauration d'une mémoire éparpillée et la préservation d'un patrimoine menacé.

Les sources d'information sont en effet nombreuses et d'un accès parfois difficile: archives des entreprises publiques, archives des entreprises privées, archives des anciennes compagnies versées aux archives nationales, archives locales, municipales ou départementales se font l'écho des multiples remous agités par le sillage des chemins de fer. Devant le nombre de ces documents, l'inégale valeur des informations qu'ils contiennent, leurs lacunes parfois, chacun doit commencer par inventorier, répertorier, dresser une carte, en constante évolution, des sources disponibles. Ces travaux préliminaires devraient trouver leur aboutissement dans un Guide du chercheur en histoire des chemins de fer que nous nous sommes promis de publier dans les années qui viennent.

Les études existantes demandent également leur bibliographie et leur recensement fait lui aussi partie de nos prochaines obligations.

Un troisième objectif, moins conventionnel peut-être mais à nos yeux d'autant plus important, vient justifier cette forme associative que nous avons souhaitée, de préférence à tout autre, donner à nos activités: mettre en relations témoins, professionnels du rail et chercheurs dans le souci d'ouvrir, par de constants échanges et débats, de nouvelles voies à l'histoire et de constituer des sources inédites pour l'historien présent ou à venir. C'est ainsi que les commissions de l'AHICF ont à coeur de rassembler des acteurs de l'évolution des chemins de fer qui se font eux-mêmes les historiens de leurs activité professionnelle ou qui, par des notes, récits, mémoires, entretiens, livrent à des chercheurs les résultats de leur expérience.

L'AHICF a par exemple privilégié, en 1990-1992, le recours aux archives orales en confiant à l'Institut d'histoire du temps présent (C.N.R.S.) une "enquête sur l'origine des très grandes vitesses ferroviaires en France" au cours de laquelle une trentaine de témoins de cette décision, dont les conséquences, amplifiées par le schéma directeur des lignes à très grande vitesse adopté en juin 1990, marquent autant notre présent que l'avenir du mode ferroviaire, ont été sollicités. Le rapport de recherche a été publié et discuté au cours d'une journée scientifique réunie en mars 1994, "aux origines des très grandes vitesses ferroviaires en France: histoire d'une décision, genèse d'une innovation", dont les actes sont sous presse.

L'AHICF lance aussi, régulièrement, des "appels à témoins", comme elle l'a fait à la suite de la journée scientifique consacrée en novembre 1991 aux "réseaux français d'Outre-Mer" ou à l'occasion de l'enquête lancée par le Musée français du Chemin de fer sur l'histoire de l'apprentissage dans les compagnies de chemins de fer.

L'Association souhaite vivement multiplier ces enquêtes et ces rencontres qui permettent de pallier en partie l'absence-ou la prescription, pour les périodes récentes-d'archives écrites, de confronter des points de vue différents, de faire revivre l'esprit qui a présidé à une décision ou les débats qui l'ont précédée.

Elles permettent également de capitaliser des savoirs, des savoir-faire qui échappent ordinairement aux traces écrites. Nous voudrions ainsi tout particulièrement favoriser les rencontres entre les étudiants qui font d'une compagnie, d'une entreprise ou d'un service ferroviaire le sujet de leur maîtrise ou de leur diplôme d'études approfondies et les personnes qui leur ont consacré leur vie professionnelle.

L'AHICF veut affirmer en effet, par sa présence auprès des entreprises, la nécessité, pour le chemins de fer d'aujourd'hui, de prendre en compte leur histoire.

Il ne s'agit pas de se plonger dans le passé à la recherche d'une magnificence perdue-telle pourrait être la pensée de beaucoup qui ont en mémoire le monopole qu'exerçait le rail dans les transports du début du siècle-mais d'établir, par un travail d'historien, les fondements de l'activité ferroviaire actuelle. L'essor et les résultats de l'histoire d'entreprise, dans les pays anglo-saxons comme, par exemple, en Italie ou en Allemagne, montrent comment un souci légitime de modernisation peut s'accomoder, et doit même s'accompagner, de la mise en valeur d'un patrimoine qui atteste d'une continuité dans l'identité des savoir-faire, des exigences, des innovations.

La R.A.T.P., en ouvrant ses archives, qui comprennent une grande part de celles des compagnies qui l'ont précédée, et en multipliant les études universitaires, a pris ainsi une initiative très heureuse pour l'histoire des chemins de fer.

L'AHICF s'efforce aussi, par des conférences et par des séminaires, de contribuer dans la mesure de ses moyens à rendre les professionnels du rail attentifs aux problèmes posés par la sauvegarde puis par la conservation des archives, par leur exploitation aussi.

3. Ses partenaires

En réunissant dès sa fondation exploitants et constructeurs tant dans son Conseil d'administration que parmi ses membres, l'AHICF a voulu affirmer sa vocation au service du mode ferroviaire en général. Elle a vu, au fil des années, s'accroître le nombre de ses partenaires avec, pour prendre un

exemple significatif, la récente et importante participation de la direction des Transports terrestres du ministère français des Transports au financement de l'enquête sur les origines des très grandes vitesses ferroviaires en France.

La générosité des personnes morales qui l'ont fondée assure le fonctionnement de l'AHICF et lui permet d'assumer la plus lourde des charges qui lui incombent, à savoir la publication de sa revue. Les cotisations de ses membres restent cependant essentielles à la vie de l'Association puisque leur montant est égal aux bourses d'étude qu'elle accorde chaque année aux jeunes chercheurs.

Désormais, et toujours davantage au fur et à mesure que s'étoffent les résultats de son activité, qu'il s'agisse de recensements bibliographiques, de réseaux de correspondants, d'enquêtes et d'études, l'AHICF se présente aux entreprises, administrations et associations qui la financent comme un prestataire de services spécialisé dans leur histoire.

Elle propose à ses commanditaires de participer, par les études qu'ils lui confient, par les informations qu'elle réunit pour eux, à la mise en valeur et à la communication des différents éléments qui constituent leur patrimoine ferroviaire dans le cadre des manifestations, expositions, colloques, publications par lesquelles ils voudraient affirmer leur identité historique.

L'Association est également en mesure de répondre aux appels d'offre de recherche lancés par les administrations-France, C.E.E.-dans le domaine des transports par fer.

4. Ses réalisations

Avec pour mission première le devoir de fédérer les recherches existantes et d'en susciter de nouvelles, l'AHICF s'est tout naturellement tournée vers la diffusion de leurs résultats, que ce soit par des rencontres, colloques ou conférences, ou par des publications.

La publication d'une revue périodique est en effet la garantie de la continuité de l'action entreprise et de la pérennité de ses résultats; lieu de rencontres et de débats, elle se veut aussi l'écho d'une vie associative animée.

La Revue d'histoire des chemins de fer tente, depuis 1989, d'atteindre ces deux objectifs. Sa parution, qui s'attache malgré quelques aléas à conserver un rythme semestriel, est le gage de la régularité des activités qui se sont peu à peu mises en place à sa suite, colloques et journées scientifiques, conférences, réunion des commissions de travail enfin.

Le Comité scientifique de l'AHICF, qui fait office de comité de rédaction, tient à assurer dans les meilleurs délais la publication des communications et débats entendus lors des colloques et journées scientifiques.

La Revue d'histoire des chemins de fer permet également aux auteurs de maîtrises ou de diplômés d'études approfondies qui ont mené à bien leur recherche avec l'aide de l'AHICF d'en publier les résultats dans un article, sans que son sommaire exclue pour autant les travaux dus à des chercheurs confirmés.

Un bulletin d'informations, publié régulièrement, vient compléter en se chargeant des importantes rubriques "comptes rendus" d'ouvrages et de revues, "actualité de la recherche" ou "courrier des lecteurs" qui permettent à l'Association d'assurer l'échange d'informations indispensable à la coordination des efforts déployés dans les différents domaines de l'histoire ferroviaire.

Les Colloques et journées ont témoigné les premiers de l'activité de l'AHICF et restent, une ou deux fois l'an, une occasion privilégiée pour ces rencontres et ces échanges. On se souvient du colloque qui, en mai 1988, avait marqué les débuts de l'association, "les chemins de fer, l'espace et la société en France", publié en 1989 par le premier numéro hors série de la Revue d'histoire des chemins de fer.

Les Colloques tentent en effet de convier plusieurs disciplines et professions autour d'un sujet qui les concerne à des titres divers dans l'espoir, qui jusqu'ici n'a pas été déçu, d'engager un dialogue fructueux: "les transports par fer et leurs clientèles" a réuni en 1990 les points de vue de l'histoire économique, de l'histoire des techniques et de la géographie des transports et fait des incursions dans l'histoire du tourisme, de la publicité ou du cinéma. "Arts et chemins de fer" a, en novembre 1993, appelé la contribution d'historiens de l'art et de l'architecture comme celle d'artistes contemporains.

1995 verra le rapprochement de deux grands acteurs de l'économie française qui s'interrogeront ensemble sur "Electricité et chemin de fer: cent ans de progrès ferroviaire par l'électricité".

Aux Journées sont réservés chaque année un sujet plus restreint, dont les enjeux problématiques permettent d'exprimer le point de vue d'une discipline sur le domaine ferroviaire: "le concept de réseau dans l'univers ferroviaire" a réuni en 1989 géographes et historiens des réseaux, "mouvement social et syndicalisme cheminot" a permis en 1990 à l'Université de Paris I des rencontres entre historiens et témoins de l'histoire sociale cheminote, "les chemins de fer dans la ville" ont rassemblé en 1991 au Musée d'Orsay historiens de l'architecture et de l'urbanisme, "les réseaux français d'Outre-Mer", en 1991 encore, ont appelé à l'Ecole nationale des Ponts et Chaussées historiens de l'économie et des techniques et fait une large place aux témoignages des anciens des chemins de fer d'Outre-Mer. "Hommes et machines, techniques et métiers du rail" a poursuivi cette initiative en 1992 en demandant à son tour le témoignage d'anciens du rail sur les mutations professionnelles qu'a entraînées l'évolution des techniques ferroviaires. 1994 a vu l'exposé des résultats des recherches sur l'origine des grandes vitesses ferroviaires et une journée "Armées et chemins de fer" devrait clore en septembre 1995 le cycle de conférences de même titre ouvert en 1993.

Autre réalisation qui témoigne de la vitalité de l'AHICF, les commissions de travail qui, nées des intérêts partagés par les membres de l'Association, les réunissent autour de travaux effectués en commun.

L'"histoire commerciale des chemins de fer", "l'histoire du matériel roulant", "l'histoire des installations fixes", "l'histoire juridique des chemins de fer", "l'histoire sociale" ont ainsi leurs commissions, formées d'anciens du rail, de chercheurs, d'amateurs. Aux chantiers qu'elles ouvrent, en réunion plénières ou lors des débats des diverses sous-commissions spécialisées, participent aussi les travaux des étudiants que soutient l'AHICF.

Le "groupe de recherche architecture et chemins de fer" propose à des architectes et à des urbanistes qui rencontrent le rail au cours de leur activité professionnelle de se joindre à des historiens de l'art et de l'architecture pour envisager en commun l'histoire des bâtiments et des quartiers ferroviaires aussi bien que les questions posées aujourd'hui par la conservation du

patrimoine bâti ou les occasions offertes à l'architecture comme à l'urbanisme par la construction du réseau à très grande vitesse. Le "groupe de recherche sur l'histoire des réseaux français d'Outre-Mer" rassemble pour sa part témoins et spécialistes des constructions ferroviaires françaises dans son domaine d'influence aux XIXe et XXe siècles.

Les travaux du groupe de recherche et des commissions trouvent leur naturel aboutissement dans les colloques, les journées, les conférences et la Revue d'histoire des chemins de fer.

5. Ses projets

Le programme de recherche qu'a établi le Comité scientifique de l'AHICF pour les années 1995-2000 privilégie d'abord l'histoire des réseaux ferroviaires internationaux, nationaux, régionaux et urbains, qu'il préconise d'aborder sous les deux angles de l'interconnexion et de l'intégration des réseaux (histoire de l'intégration technique des systèmes, des relations internationales des compagnies de chemins de fer...) et de la place des transports par fer dans l'aménagement du territoire européen et dans l'intégration des régions.

Il lui semble en effet indispensable que les études historiques accompagnent le développement et l'intégration des réseaux de chemin de fer européens engagés dans une mutation technique et économique qui remet en cause leurs structures. Cette mutation a des précédents: la fin du XIXe siècle a vu ainsi, par exemple, une première unification de l'exploitation ferroviaire dans chacun des pays d'Europe et l'amorce d'une coopération européenne dans l'action commerciale au service des voyageurs internationaux. Le XIXe siècle et le début du XXe siècle ont expérimenté les divers modes possibles de relations, de droit et de fait, des compagnies de chemins de fer et de la puissance publique sous ses différentes expressions.

C'est pourquoi le prochain colloque de l'AHICF, prévu en 1996, s'intitule "Quel régime pour les chemins de fer en temps de concurrence ? Choix du XIXe siècle et débats actuels" et souhaite rapprocher, dans une même réflexion, historiens des évolutions passées venus de plusieurs pays d'Europe et acteurs des changements actuels.

6. Programme indicatif des recherches pour les années 1995-2000

Domaines. Etudes considérées comme prioritaires. Autres sujets ou travaux en cours. Le système technique, son histoire, ses interprétations.

1. Histoire de la sécurité

- sécurité de l'exploitation des systèmes
- régulation des réseaux

2. Histoire des relations internationales des chemins de fer français: la diffusion en Europe et Outre-Mer des modèles français de relations entre la puissance publique et les transports ferrés; comparaison entre les régimes des différents pays. Histoire des techniques de régulation des réseaux: introduction du Block-System, histoire des télécommunications ferroviaires.

Histoire de l'informatisation des entreprises ferroviaires: mécanographie, informatique.

En cours: histoire des très grandes vitesses. Le chemin de fer client de l'économie française.

1. Histoire économique et politique: histoire des rapports entre les transports par fer et les sources de leur énergie.

2. Les commandes des chemins de fer et le développement de la métallurgie en France (technique, économie).

Monographies d'entreprises fournisseurs des chemins de fer: constructeurs de matériel roulant, de signalisation; entreprises de travaux publics.

Histoire des investissements ferroviaires

En cours: aspects techniques de l'histoire énergétique des chemins de fer; chemins de fer et thermodynamique, chemins de fer et électricité. Le chemin de fer, élément du réseau des transports.

1. La connexion locale et régionale des réseaux des points de vue de la géographie, de l'aménagement, de la tarification et de la politique commerciale des exploitants:

l'harmonisation des transports régionaux, interrégionaux et urbains de voyageurs et les pratiques culturelles et sociales qui en sont les effets (sociologie des voyages, économie du tourisme, transports urbains, déplacements régionaux.

relations entre opérateurs, chargeurs, clients du fret (embranchement des particuliers au réseau, entreprises de wagons de particuliers).

2. Histoire des relations internationales des chemins de fer: institutions de coopération, de normalisation technique et juridique.

Histoire des relations internationales des chemins de fer :

- les accords commerciaux;
- la place des chemins de fer dans les relations entre Etats (en cours: armées et chemins de fer).

Domaines. Etudes considérées comme prioritaires. Autres sujets ou travaux en cours. L'entreprise d'exploitation ferroviaire.

1. Histoire de l'organisation des entreprises:

- histoire des services commerciaux (histoire de leur constitution, de leur fonctionnement, de leur rapport aux autres services; origines et formation des agents, carrières, constitution d'un milieu professionnel;
- histoire des services financiers.

2. Histoire des techniques de gestion: calcul économique; comptabilité.

3. Histoire de la responsabilité civile et pénale de l'entreprise exploitante. Monographies de réseaux locaux, secondaires et urbains (France et Outre-Mer) et d'établissements.

Etude du premier recrutement des compagnies au XIXe siècle (démographie historique).

Histoire des métiers.

Histoire des mouvements sociaux. Le chemin de fer, ses images et ses représentations. Journée scientifique: langues et écritures du chemin de fer (linguistique et histoire de la littérature) (1996).

2. Le chemin de fer comme culture. En cours: histoire de l'architecture ferroviaire; étude des bâtiments techniques, des ouvrages d'art). Theme commun auquel tous sont invités à contribuer par des études, enquêtes, témoignages. Histoire de la reconstruction du réseau français (1944-1950):

reconstruction des infrastructures et des ouvrages d'art; reprise de l'exploitation, reconstitution du parc de matériel, de l'alimentation électrique, évolution de l'entreprise, mouvements sociaux.

Quel régime pour les chemins de fer en temps de concurrence ?

Choix du XIXe siècle et débats actuels.

5e colloque de l'Association pour l'histoire des chemins de fer en France
automne 1996

Première annonce

Dans le contexte actuel du marché européen unique, les moyens de transports doivent jouer un rôle fondamental. S'adapter à l'esprit du traité de Rome, favoriser une concurrence commerciale efficace en faveur des usagers, telles sont les principales directives qui, en matière de chemin de fer, furent définies par le Conseil de la Communauté économique européenne en juillet 1991.

Les moyens auxquels il faut recourir pour atteindre de tels objectifs suscitent de vives polémiques entre adversaires et partisans de la main-mise de l'Etat sur les exploitants ferroviaires. L'insuffisance de crédits adaptés aux besoins d'investissement, capables d'introduire des innovations organisationnelles et technologiques, ainsi que l'exploitation déficitaire des réseaux européens ont fait naître des projets de privatisation au cours de ces quinze dernières années.

Les progrès de l'informatique laissent entrevoir un remodelage des systèmes techniques à grande échelle (*Large scale technical systems*) et donc une remise en cause de la situation de "monopole"-monopole légal de l'occupation du domaine public et monopole technique de l'exploitation-dont l'origine remonte au XIXe siècle.

Dès son apparition, le chemin de fer s'est révélé très différent des modes de transport traditionnels car, pour des questions de sécurité et de régularité, l'exploitation des installations fixes et la circulation des trains étaient indissociables. De plus, la construction des lignes nécessitait d'énormes capitaux et donc l'intervention des banques.

Ces deux spécificités, qui constituaient une véritable rupture par rapport au passé, furent alors à l'origine de longues discussions car les gouvernements ont dû répondre à trois questions très précises: 1 quelle est la nature proprement dite du service ferroviaire ? 2 qui doit financer les travaux de construction des lignes ? 3 qui doit en être l'exploitant ?

Plusieurs solutions étaient envisageables et les choix effectués dans les principaux pays d'Europe occidentale furent le résultat-momentané le plus souvent-des débats qui opposèrent ingénieurs, représentants de l'administration des Travaux Publics, juristes, hommes d'affaires, économistes, à propos du rôle que devait assumer l'Etat.

Certains estimaient que les chemins de fer, comme les routes et les canaux, constituaient un service public que seul l'Etat, dont la fonction essentielle est de défendre l'intérêt général, pouvait prendre en charge. Etant donné que l'on ne pouvait concevoir plusieurs exploitants sur une même ligne ou sur un même réseau et que l'on ne pouvait permettre la concurrence de deux exploitants sur des lignes parallèles, les chemins de fer créaient également une situation de monopole taxée par les "étatistes" de "naturel" et qui ne pouvait être remise en cause. La formation de compagnies privées aurait signifié, ou signifiait à leurs yeux, la transformation de ce monopole en un monopole d'exploitation légal, mais artificiel, dont les effets auraient été pernicieux et contraires aux intérêts de tous.

Les défenseurs de l'initiative privée ne niaient pas le caractère monopolistique du service ferroviaire mais ils pensaient que l'Etat, en exerçant son contrôle administratif sur la construction et l'exploitation des voies, pouvait combattre les éventuelles exactions de l'exploitant. Le cahier des charges auquel était assujéti ce dernier était une garantie de l'équité du service ferroviaire. Selon ceux-ci, l'exploitation pouvait être assimilée à une industrie et elle devait, en tant que telle, répondre à la demande c'est-à-dire satisfaire les besoins des usagers et rémunérer les capitaux investis.

Omniprésence de l'Etat ou tutelle de l'Etat nécessaire conséquence du monopole d'exploitation, le choix n'était pas facile car, à ses débuts, la technologie ferroviaire présentait beaucoup d'incertitudes: "ni les coûts de construction, ni les coûts d'exploitation, ni les produits ne pouvaient être raisonnablement évalués [et les] possibilités techniques elles-mêmes du système

pouvaient être contestées” (François Caron). Dans la plupart des cas, l'entente entre l'initiative privée et l'Etat fut recherchée afin de satisfaire les aspirations des différents acteurs en présence. Les compagnies privées bénéficièrent du monopole et de la garantie de l'Etat pour financer d'éventuels déficits (garantie d'intérêt sur le capital ou garantie sur les recettes d'exploitation avec remboursement ultérieur). En contre-partie, elles furent obligées de construire des lignes peu rentables et d'accepter le contrôle de l'Etat en matière tarifaire. Dans les faits, la collaboration s'avéra difficile et, périodiquement, les débats entre les défenseurs des compagnies et les partisans de l'Etat s'enflammèrent. Les rachats et nationalisations opérés à partir du début du XXe siècle y mirent momentanément fin. Mais, à moyen terme, les grandes structures bureaucratiques confrontées de plus en plus à la concurrence des autres modes de transport (routes et aviation) se préoccupèrent d'obtenir des compensations, ce qui conduisit à une nouvelle remise en cause de leur existence. Des projets de “privatisation” ont vu le jour. En général, il s'agit de transférer la propriété actionnariale au profit des particuliers sans modifier la structure de l'entreprise. Il peut s'agir aussi d'un démantèlement de celle-ci, tel que l'a proposé le Railway Act britannique de novembre 1993: la séparation entre la gestion des lignes, des gares et des installations fixes d'une part et la gestion du matériel roulant d'autre part constitue l'aspect fondamental de la réforme qui repose sur les progrès de l'informatique. On envisage aussi, sur les mêmes infrastructures, l'organisation de services ferroviaires complémentaires ou concurrents.

Les débats auxquels nous assistons aujourd'hui rappellent donc ceux du siècle dernier. Aussi l'A.H.I.C.F. a-t-elle jugé opportun d'établir une comparaison entre les deux périodes: la confrontation des arguments exprimés au milieu du XIXe siècle et à l'heure actuelle semble indispensable non seulement pour nous aider à mieux comprendre le présent à la lumière du passé mais aussi pour en éclairer l'avenir.

Président: Jean Bergougnoux, président du conseil d'administration de la SNCF

Délégué général: André Blanc, directeur honoraire de la SNCF, président du conseil de rédaction de la Revue générale des chemins de fer.

Secrétaire général: François Caron, historien, professeur à l'université de Paris IV-Sorbonne.

Comité scientifique:

Etienne Auphan, géographe, professeur à l'université de Nancy II.

Karen Bowie, historienne de l'art, maître-assistant à l'Ecole d'architecture de Paris-Conflans.

François Caron, historien, professeur à l'université de Paris IV-Sorbonne.

Bruno Carrière, chef de la rubrique "histoire" de La Vie du rail.

Bernard Escudié, physicien, professeur à l'Institut de chimie et physiques industrielles (Lyon).

Michèle Merger, historienne, chargée de recherche au C.N.R.S. (Institut d'histoire moderne et contemporaine).

Maurice Poinsignon, ingénieur en chef hors classe honoraire de la SNCF.

Georges Ribeill, sociologue, directeur de recherche à l'Ecole nationale des ponts et chaussées (LATTS).

Maurice Wolkowitsch, géographe, professeur émérite de l'université d'Aix-Marseille II.

Secrétariat

Marie-Noëlle Polino.

Association pour l'histoire
des chemins de fer
en France

7, boulevard de l'Hôpital

F-75013 Paris

Tél.: 33 (1) 44 24 91 09

Télécopie: 33 (1) 45 84 19 20

Andreas Kunz

Inland Transport and European Economic development in the Nineteenth Century. The Case of Inland Waterways

1. The State of Research

Recently inland transport and communication has emerged once again as a major theme in economic history. At the Tenth International Economic History Congress, held at Leuven in 1990, two of the main sessions were devoted to this topic, one covering the pre-industrial period, the other the industrial period¹⁶. The session on the industrial period had been preceded by preparatory meetings held in Paris and Madrid¹⁷. In May 1993, a conference on the development of transnational European transport and communication networks took place in San Miniato near Florence, organized as a pre-conference for the Eleventh International Economic History Congress scheduled to assemble at Milan in September 1994¹⁸. In September 1993, finally, a conference on the development of inland waterway transport in the nineteenth century was held at Mainz¹⁹.

My brief remarks of today are a product of this renewed interest in transport history since they encapsulate to some degree the earlier discussions held at Madrid, Leuven, San Miniato and Mainz. Since I am not a specialist in

16 Cf. *Debates and Controversies in Economic History*, ed by H. Van Der Wee and E. Aerts, Leuven 1990, pp. 71-116. The papers of the session covering the industrial period were later published in French as a special issue of the journal "Histoire, Economie et Société", 11, 1992, ed. by M. Merger, *Les transports terrestres en Europe Continentale (XIXe-XXe siècles)*.

17 The deliberations of the Paris meeting have been published, again as a special issue of "Histoire, Economie et Société", 9, 1990, under the title *Les transports*.

18 A selection of the papers presented at San Miniato have been published for the Milan Congress by the organizers of the session: *European Networks: New Approaches to the Formation of a Transnational Transport and Communications System*, ed. by A. Carreras, A. Giuntini and M. Merger, Milan 1994.

19 The proceedings are currently in the process of being published: *Inland Navigation and Economic Development in Nineteenth-Century Europe*, ed. by A. Kunz and J. Armstrong, Mainz, 1995. See also the published conference reports in "Journal of Transport History", 15, 1994, pp. 197-200; and in "Ricerche Storiche", 24 1994, pp. 155-60.

railway history, I may be permitted to look at the transport revolution of the nineteenth century and its economic impact from the perspective of one of the “preindustrial branches of transport”, i.e. inland waterways. At the Leuven Congress, François Caron, the organiser of the session on the development of transport in the industrial period, forcefully pointed to the continued importance of river and canal traffic both at the beginning and again towards the end of the nineteenth century, speaking of a “renaissance of the canals” having taken place at the turn of the century²⁰. Also at Leuven, I myself pleaded for a greater integration of inland navigation in the ongoing discussion on the relationship between transport and economic growth in the nineteenth century²¹. Despite the fact that some of the papers read at the aforementioned conferences do indeed deal with the subject, it became clear that a research gap still existed on the precise role which canal and river traffic played in industrializing Europe.

2. The Mainz Workshop

Not least as a result of a latent dissatisfaction with the state of research on inland waterways, as opposed to the high level of attention given to the performance of the railways, the idea for a special workshop on inland navigation was first broached at Leuven. Its purpose was to assemble a forum of experts-economic historians, transport historians, economists, and geographers-to conduct an international comparison of current research on the economic history of European river and canal transport in the nineteenth century.

The workshop took place in Mainz in September 1993²². Its main themes-which are the main themes of the published volume as well-were (a) the changes wrought by the industrialization process upon a “pre-industrial” transport system, and (b) the measuring of this system's performance and of its contribution to economic growth. In preparation for the conference,

20 F. Caron, *L'évolution des transports terrestres en Europe (vers 1800-vers 1940)*, in *Debates and controversies*, cit., pp. 85-93, especially pp. 86-87 and 91-92. See also S.P. Ville, *Transport and the Development of the European Economy 1750-1918*, London, 1990, especially pp. 30-40.

21 Cf. A. Kunz, *Voies navigables et développement économique*, in *Les transports terrestres en Europe Continentale*, cit., pp. 13-17.

22 The author wishes to acknowledge the support given by the Thyssen Foundation, Cologne, and the Institute for European History, Mainz, for the funding and organization of the workshop.

therefore, prospective contributors were asked to address their papers to the following three questions:

- (1) What was the economic significance of inland navigation in the pre-industrial economy of the respective country and how did it change under the impact of industrialization and railway building ?
- (2) Can the economic performance of inland waterborne traffic (national or regional networks or individual rivers or canals) be investigated in quantitative terms, and what are the statistical sources to be used in such an analysis ?
- (3) What agencies and associations, governmental or voluntary, were active in the continued promotion of inland waterway transport, waterway construction, and waterway policy ? Was there a "canal lobby" and if so, how successful was it ?

Naturally, these three areas were meant as a suggestion for the papers, which could focus on specific countries, regions, single waterways, or on specific locations like ports. In order to define the subject matter more clearly and to limit the scope of a small-size workshop, maritime transport and coastal shipping were not to be subjects of the workshop per se, but could, of course, be dealt with in connection with river and canal traffic or with the discussion of ports where these three modes of transport interfaced²³. Another suggestion made to prospective participants was to maintain a clear focus on the economic history of inland navigation, and not, or at least not primarily, on its social and technological history. The latter, to be sure, are both interesting topics in themselves, but they have, perhaps, been less neglected in the past than the economic aspects.

It goes without saying that not all countries or regions could be covered in a conference of this size or in its published proceedings. Some European countries with sizeable inland waterway traffic, most notably Russia, were not represented at the workshop. Still, an attempt was made to cover most of Europe, extending from Sweden in the north to Italy in the south, and from Spain in the southwest to Bulgaria in the southeast. With regard to time span,

23 This implies an artificial separation of these three modes of waterborne transport, of course, a separation that would be open to much criticism.

the workshop's main focus was on the nineteenth century, although some contributions touched upon the eighteenth and twentieth centuries as well.

3. Interim Results: Inland Navigation and the European Economy in the Nineteenth Century

There seemed to be a general agreement among participants at the Mainz workshop that inland waterways formed the backbone of the inland transport system in the pre-industrial economies of Europe. Prior to the railways, the long haul of passengers and goods via rivers, canals, and lakes was the preferred, in the absence of useable roads, sometimes the only mode of transport available. The improvement of these lines, which were likewise important as arteries of communication, became one of the mainstays of mercantile policies in the eighteenth century, particularly in France and Prussia, but also, albeit under much less favourable conditions, in countries like Italy and Spain. In England canal-building assumed a feverish pace in the second half of the eighteenth century, greatly aiding the "take-off" of a process later to be called the Industrial Revolution. In the Low Countries, inland navigation in the seventeenth century contributed greatly to the expansion of trade and commerce and thus to capital formation and national wealth.

If the seventeenth and eighteenth centuries were, in many ways, of growing importance for canal and river transport throughout most of Europe, the nineteenth century was to usher in important changes. In the first half of the century the building boom in canals continued in most European countries. The steamship ushered in a brief "golden age" of inland navigation even in a more remote and economically backward country like Sweden. In the second half of the nineteenth century increased competition from the railways led to a sharp and prolonged crisis in river and canal traffic. This crisis had many facets: canals only completed a few years earlier, were abandoned or even filled up and used as beds for railway lines; steamship companies which previously had shown good returns, now failed to do so and were either bought by a few remaining large (and still profitable) ones or simply went out of business; rivers, which had been navigated since the middle ages, suddenly lost their share of traffic completely, wiping out the shipping industry tied to the particular waterway in the process.

It needs to be emphasised, though, that this rather gloomy picture in many ways represents the conventional wisdom on the subject matter. As many of the contributions to the workshop showed, the timing, intensity, impact, and consequences of the crisis varied greatly, not only between countries, but also from region to region within a particular country or even from location to location within a given region. While in some countries (or regions), for example in Great Britain, industrialization and railway building did indeed lead to a marked decline of river and canal traffic. In others like Belgium and the Netherlands inland navigation continued playing an important role despite railway construction (or even in the absence of it), particularly as a mover of bulk commodities like coal, peat, or building materials. Moreover in highly industrialized countries like Germany or in the industrial regions of northern France, the existing infrastructure was modernized sufficiently to overcome the challenge posed by the railways, so that by the end of the century one could well speak of a “renaissance” of canals and (canalized) rivers in inland transport in these areas.

4. Problems of Quantification and Representation

It is difficult, but not impossible to measure the impact canal and river transport had on a local or regional economy. However to do the same at the national level presents a whole set of additional problems. The quantification of the traffic flows on national inland waterway networks is a necessary first step. Regional variants have to be taken into account even when assessing the national picture, which greatly complicates things in large countries. Thus it may well be that only at the regional or local level can the precise impact of waterway traffic on national economies be ascertained. Whether, and to what extent, the presence or absence of waterborne traffic had a bearing on economic growth on the national scale is hard to calculate, therefore, particularly given the paucity of available data for the earlier periods. The collection of reliable statistical information on such things as size of fleets, length and tonnage of waterways, density of traffic, volume, type and value of commodities shipped, ton-kilometre performance, freight rates etc., is a necessary precondition for any long-term quantitative analysis. Ideally, such time series should reach back as far as the eighteenth century; they should not

only offer national aggregates, but regional and local figures as well²⁴. It is on the basis of this kind of data that the economic performance of waterway traffic can be reconstructed. Using the new data for tabular, graphical or cartographic representations we are able to observe first pieces in a mosaic which, once completed, may offer full reconstruction of the performance of European waterways in the industrial period²⁵. Only after this kind of statistical reconstruction and analysis has been done will we be able to judge more clearly how well or how poorly the waterways performed vis-à-vis their great competitor, the railways, and what exactly their overall contribution to economic growth was during the industrialization of Europe.

24 As far as I know, projects to assemble this kind of data are currently underway in Belgium, France, Germany, the Netherlands, and in Sweden.

25 On cartographic approaches, see A. Kunz, *Coordinates for Historical Maps on the Development of German Transport since 1835*; and A. Carreras-A. Giuntini-M. Goerke, *Towards a computerized historical Atlas of European Transport and Communications, 19th-20th Centuries*, both in *Coordinates for Historical Maps*, ed. by M. Goerke, Göttingen, Max-Planck Institut, 1994, pp. 109-132.

Michèle Merger

Histoire des transports en France (XIXe-XXe siècles). Quelques repères bibliographiques

Les références bibliographiques que nous présentons ici ne sont pas exhaustives. Face à l'ampleur numérique des articles et des études effectuées depuis 1987²⁶, un choix était nécessaire et nous avons retenu les travaux qui nous sont apparus les plus significatifs²⁷. Leur présentation par type de transport montre, une fois de plus, que les études concernant les chemins de fer sont de loin les plus nombreuses et la mise en circulation à partir de l'automne 1994 de l'Eurostar (T.G.V. Paris-Londres) laisse supposer qu'elles le seront encore plus au cours des mois à venir. La création de l'Association de l'Histoire des Chemins de fer en France (A.H.I.C.F.) en 1987 a permis de regrouper les chercheurs, de créer une dynamique fort salubre parmi les milieux universitaires et de susciter ainsi un certain nombre d'études dont la valeur scientifique est incontestable. Cette suprématie ne doit pas nous faire oublier les initiatives récentes dont la plus importante, due à B. Le Sueur, doit aboutir à la création, en 1995, d'un centre de recherche sur les cours d'eau.

Ouvrages généraux

Transports, in "Culture technique", n. 19, Neuilly-sur-Seine, 1989

Les transports, 7 articles publiés sous la direction de M. Merger in numero spécial de la revue "Histoire économie et société", 1, 1990:

- 26 M. Merger, *Transport history in France: a bibliographical review*, in "The Journal of Transport History", vol 8, n. 2, september 1987, pp. 179-201.
 27 Pour dresser un état quasi-exhaustif des publications, il est indispensable de consulter la *Bibliographie annuelle de l'Histoire de France*, dont la parution régulière permet au chercheur d'ajourner rapidement ses connaissances bibliographiques.

G. Arbellot, *Les problèmes de la route française à l'entrée du XIXe siècle*, pp. 9-17

J.M. Goger, *Les routes de l'Aisne et de la Sarthe entre linéarité et complémentarité 1812-1850*, pp. 19-38

Y. Leclercq, *L'Etat, les entreprises ferroviaires et leurs profits en France (1830-1860)*, pp. 39-63.

M. Merger, *La concurrence rail-navigation intérieure en France 180-1914*, pp. 65-94.

C. Bouneau, *Chemins de fer et développement régional en France de 1852 à 1937: la contribution de la compagnie du Midi*, pp. 95-112

M.S. Vergeade, *Un aspect du voyage en chemin de fer: le voyage d'agrément sur le réseau de l'ouest des années 1830 aux années 1880*, pp. 113-134

D. Larroque, *L'expansion des tramways urbains en France avant la première guerre mondiale*, pp.135-168

En préparation:

M. Merger (avec la collaboration de C. Bouneau, J.M. Goger et D. Larroque): *Les transports en France XIXe-XXe siècles* (Collection: "Annuaire statistique de l'économie française aux XIX e-XXe siècles", dirigée par F. Caron, vol. 4, P.E.N.S. Paris).

Chemins de fer (non compris les volumes de la "Revue d'histoire des chemins de fer")

L. Bonnaud, *Lien fixe transmanche et relations franco-britanniques. Perspectives historiques: 1856-1987*, Thèse de Doctorat en Histoire, Université de Paris IV Sorbonne, 1992

L. Bonnaud, *Le Tunnel sous la Manche. Deux siècles de passion*, Paris, Hachette, 1994

Les grandes gares parisiennes du XIXe siècle, Catalogue d'exposition, sous la direction de K. Bowie, Délégation à l'action artistique de la ville de Paris, Paris, 1987 (diffusion: Hachette)

F. Caron, *The Evolution of the Technical System of Railways in France from 1832 to 1937*, in T. HUGHES, R. MAYNTZ, *The Development of Large Technical Systems*, Frankfurt am Main, Ed. Campus Verlag, 1988, pp. 69-103

C. Chevandier, *Cheminots en usine. Les ouvriers des Ateliers d'Oullins au temps de la vapeur*, Lyon, Presses universitaires de Lyon, 1993

A. Faure, *A l'aube des transports de masse. L'exemple des "trains ouvriers" de la banlieue de Paris (1883-1914)*, in "Revue d'histoire moderne et contemporaine", avril-juin 1993, pp. 228-255

C. Lamming, *Evolution des politiques de traction à la S.N.C.F.*, Thèse Université de Paris IV, 1993

Y. Leclercq, *Les transferts financiers Etat-compagnies privées de chemin de fer d'intérêt général (1883-1908)*, in "Revue économique", vol. 33, n. 5, septembre 1982, pp. 896-924

Y. Leclercq, *Le réseau impossible, 1820-1852. La résistance au système des compagnies ferroviaires et la politique économique de la France*, Genève, Librairie Droz, 1987

N. Neiertz, *Les chemins de fer de l'Etat. Histoire d'une entreprise (1908-1937)*, Mémoire de maîtrise (directeur F. Caron), Paris IV, 1989

J. Payen, *La machine locomotive en France des origines au milieu du XIXe siècle*, P.U. de Lyon- Ed. du C.N.R.S., Lyon-Paris, 1988

G. Ribeill, *Gestion et organisation du travail dans les compagnies de chemins de fer des origines à 1860*, in "Annales Economie Société et Civilisations", septembre-octobre 1987, n. 5, pp. 999-1029

G. Ribeill, *Le personnel des compagnies de chemins de fer. Les cheminots en guerre 1914-1920*, Paris, CERTES-ENPC, 1988

G. Ribeill, *La révolution ferroviaire. La formation des compagnies des chemins de fer en France (1823-1870)*, Paris, Belin, 1993

M.S. Vergeade, *Orientations bibliographiques sur le concept de réseau dans l'univers ferroviaire*, in "Revue d'histoire des chemins de fer", printemps 1990, n. 2, pp. 227-236.

Grande vitesse sur les rails, numero spécial de la revue "Transports", n. 310, décembre 1985

T.G.V., numero spécial de la revue "Annales des Mines. Réalités industrielles", octobre 1990

D'où viens-tu T.G.V.?, in "Revue générale des chemins de fer", n. 8-9, août-septembre 1994. Un numero spécial de la "Revue d'histoire des chemins de fer" sera prochainement consacré à ce thème.

En préparation:

F. Caron, *Histoire des chemins de fer en France des origines à la nationalisation* (Ed. Fayard)

Navigation intérieure

M. Merger, *La Seine dans la traversée de Paris et ses canaux annexes: une activité portuaire à l'image d'une capitale (1800-1939)*, in F. Caron, J. Derens, L. Passion et P. Cebron De Lisle, *Paris et ses réseaux: naissance d'un mode de vie urbain XIXe-XXe siècles*, Paris, 1990, pp. 349-386.

B. Escudie-J.M. Combe-J. Payen, *Vapeurs sur le Rhône. Histoire scientifique et technique de la navigation à vapeur de Lyon à la mer*, Lyon, Ed. du C.N.R.S., Presses Universitaires de Lyon, 1992

Le Sueur, *L'homme, la ville et ses rivières. Conflans sainte Honorine. Histoire fluviale de la capitale de la batellerie*, Paris, L'Harmattan, 1993

La Seine et son histoire en Ile de France, actes du colloque qui s'est tenu à Conflans Sainte-Honorine en décembre 1993 in "Paris et Ile de France.

Mémoires publiés par la Fédération des Sociétés historiques et archéologiques de Paris et de l'Ile de France", Paris, 1994, tome 45

Routes, transports automobiles

J.M. Goger, *La politique routière en France de 1716 à 1815*, Thèse d'Etat E.H.E.S.S., Atelier de reproduction des thèses, Lille III, 1988

J.M. Goger, *Le temps de la route exclusive en France: 1750-1850*, in "Histoire économie et société", n. 4, 1992, pp. 597-618

J.M. Goger, *Routes et chemins de la France moderne 1661-1850*, in "Sources", n. 19, octobre 1989

J. L. Loubet, *La Société Anonyme André Citroën 1924-1968, étude historique*, Thèse de 3ème cycle, Paris X Nanterre, 1979

J. L. Loubet, *Les Automobiles Peugeot, histoire d'une entreprise 1945-1973*, Thèse de doctorat d'Etat, Paris X Nanterre, 1989

J. L. Loubet, *Les grands constructeurs privés et la reconstruction. Citroën et Peugeot 1944-1951*, in "Histoire économie et société", n. 3, 1990, pp. 441-469

Transports urbains

G. Bouchet, *Le cheval à Paris au XIXe siècle*, Thèse de l'Ecole des Chartres, Genève, Droz, 1993

D. Larroque, *Le réseau et son contexte: le cas des transports collectifs urbains (1880-1939)*, in Caron, Derens, Passion et Cebron De Lisle, *op. cit.*, pp. 299-341

N. Papayanis, *The Coachmen of the Nineteenth Century Paris. Service Workers and Class Consciouness*, Baton Rouge, Louisiana University Press, 1993

N. Papayanis, *Un secteur des transports parisiens: le fiacre, de la libre-entreprise au monopole (1790-1855)*, in "Histoire économie et société", n. 4, 1986, pp. 559-572

Transports aériens

E. Chadeau, *De Blériot à Dassault. Histoire de l'industrie aéronautique en France 1900-1950*, Fayard, 1987

A. Gras (avec C. Moricot, S.L. Poirot-Delpech et V. Scardigli), *Le pilote, le contrôleur et l'automate*, Paris, Ed. Iris, 1991

Andrea Giuntini

Italian Transport History: Recent Developments

The state of research in the field of transports in Italian historiography, relating to XIX and XX centuries, is quite contradictory. There are some sectors which have been carefully analyzed, or at least they have been represented by a good number of works; other sectors have been completely neglected by historians. We can draw a satisfactory framework over the last twenty years, and undoing so evidence the peculiarities of our knowledge.

Before listing the works and the relevant comments, we should stress some elements, which are crucial to understanding the actual state of research in Italy. Firstly we have to argue that there are no academic journals devoted to the history of transport; this argument appears in the context of many works, but it is represented by any specific journal. Different trends are missing, there are no schools and chairs focusing in particular on any kind of transport; specialized institutes, as they have in other countries, were never created in Italy; a few conferences were organized in the past years on this topic and we have just a limited number of private railway museums, which are superior to better than the public one, abandoned in Naples, after the State railroad company promised to make Pietrarsa one of the best railway museums in the world.

So the debate was not developed continuously in any area and the lack of controversies could not spark off any new research and interest neither in the younger researchers. The only case we can mention is the one provoked by the works by Stefano Fenoaltea on the role of railways in the economic development of the country and more generally on the impact of transports on the economic growth²⁸. The forward and backward linkages theory did not

28 S. Fenoaltea, *Le ferrovie e lo sviluppo industriale italiano 1861-1913*, in *Lo sviluppo economico italiano 1861-1940*, ed. by G. Toniolo, Bari, Laterza, 1973, pp. 157-186; idem, *Italy, in Railways and the Economic Development of Western Europe 1830-1914*, Oxford, St. Antony's-Macmillan Press, 1983, pp. 49-120; idem, *Le costruzioni*

overly please the Italian scholars; in general cliometrics were not particularly appreciated and Robert Fogel's pioneer volume was rapidly forgotten. The final result is that we are still asking ourselves in Italy whether the railways were really crucial in stimulating the economic growth of the country.

Nevertheless, the major interest was devoted to railways²⁹; the level of the small number of works on this topic has significantly increased during the last twenty years, since the role played by economic history became more important than the one played by the traditional political history, which had previously constituted the most common trend. There is now a great interest in the preunitarian railways; unfortunately there are no studies on the development of transports, and notably railways, in the period post World War II to the present. As in other fields, the business history approach was not developed enough; new studies will be useful in analyzing more carefully the creation of the Italian national market and the structure of railways companies³⁰. We do not know anything about tariffs, freight rates, the rolling stock industry and we are still awaiting a good work on railway statistics, even if there are precious sources which have not yet been exploited. Railway technology was left to the "enthusiasts" and it would be very interesting to understand the profiles of the railway engineers: the only ones we have are drawn up in a very traditional way. Italian historiography needs general works as well. The local ones are many, but probably it is time to launch a multivolume history of Italian railways written by a group of scholars. However, in this case the State company FS should finally open its archives.

An area which has not yet been covered is the field of coastal shipping and inland waterways. In the former many famous Italian scholars were deeply involved for a long time, but not relatively to the XIX and XX centuries. Only recently was a good book published, in which we have the most up-to-date achievements in this field³¹. Nothing is available on the role of canals in industrialization for a very simple reason: this subject was irrelevant and Italian scholars preferred to concentrate on different topics.

ferrovie in Italia, 1861-1913, in "Rivista di storia economica", n.s., vol. I, n. 1, giugno 1984, pp. 61-94.

29 A complete list of works devoted just to railways is in A. Giuntini, *Le ferrovie nella storiografia italiana*, in "Italia contemporanea", 1990, n. 179, pp. 325-332.

30 The only significant work of such an approach is M. Merger, *Origini e sviluppo del management ferroviario italiano (1850-1905)*, in "Annali di storia dell'impresa", 1992, n. 8, pp. 379-417.

31 *La penisola italiana e il mare. Costruzioni navali trasporti e commerci tra XV e XX secolo*, a cura di T. Fanfani, Napoli, ESI, 1993.

Some final words should be devoted to the advanced state of research in the field of urban transport, thanks to the opening of many municipal archives and to the requests of the municipal trasport firms in order to know something about their own personal histories.

The next two major achievements in Italian historiography concerning the history of transport should be a network analysis³² and comparative studies, two approaches which are presently lacking in Italy.

32 A first step was made some years ago by L. Bortolotti, *Viabilità e sistemi infrastrutturali*, in *Storia d'Italia. Annali 8. Insediamenti e territorio*, a cura di C. De Seta, Torino, Einaudi, 1985, pp. 289-366.

Lando Bortolotti

L'histoire des routes à l'époque de la motorisation

Au congrès de S. Miniato nous nous sommes proposés de reconstruire la genèse des réseaux de communications européens. A cet égard je voudrais souligner l'utilité d'étudier le rôle joué par les techniciens et par les groupes financiers des pays qui ont connu une industrialisation précoce-l'Angleterre tout d'abord; ensuite la Belgique, la France, l'Allemagne, la Hollande-dans l'équipement en chemins de fer, en télégraphes, en câbles sous-marins des pays qui étaient en ce temps-là relativement en retard (l'Espagne, l'Italie, le Portugal, la Russie, la Serbie, la Grèce etc.).

En Italie (mais, je suppose, en d'autres pays aussi) l'influence anglaise paraît évidente même en ce qui concerne la terminologie technique: au XIX^{me} siècle l'on disait et écrivait *pachebotto* (*Packet-Boat*) pour bateau à vapeur; *ferryboat* (pour *traghetto*), *tramway*, *trolleybus*, et naturellement *treno* pour train etc. C'est de l'Angleterre que nous vient la circulation à gauche des trains, la mesure de la voie normale (écartement) de chemins de fer, et vraisemblablement la technique du trafic ferroviaire.

Chacun de ces pays nous fournit beaucoup d'informations sur les groupes financiers qui ont réalisé les infrastructures modernes, et sur la provenance des capitaux, mais on voudrait en savoir davantage sur les aspects globaux concernant l'Europe toute entière. Quels sont les pays qui ont exporté la technologie, les machines, les capitaux, les techniciens; dans quels pays et à quelle période s'est déroulée leur action, d'une côté, et de l'autre, quels sont les pays attardés qui ont du importer la technologie etc.; et où ils ont puisé les ressources (information, capitaux, experts). C'est-à-dire: quelle partie des réseaux nationaux de chaque pays attardé est attribuable, partiellement ou totalement, à l'initiative du tel ou tel autre pays; et quelles sont les initiatives concernant d'autres pays dans chaque pays avancé. Il faudrait commencer à

dresser un catalogue (ou plusieurs ?) à ce propos. Cela pourrait nous éclairer sur certains aspects de l'histoire politique et économique.

La question concerne l'Italie et a un rapport avec les mouvements pour l'indépendance de ce pays: les hommes politiques du Piémont-les protagonistes principaux de l'unification de la nation-ont compris très tôt quelle poussée vers la modernisation et vers la collaboration européenne auraient apporté les chemins de fer. Le Comte de Cavour, l'artisan principal de l'unité nationale, écrit en 1844 ou en 1846, dans la *Revue nouvelle de Paris*: "Les chemins de fer seront une arme puissante, à l'aide de laquelle les nations que dans la marche ascensionnelle des peuples modernes sont demeurés attardés, parviendront à triompher des forces qui les retiennent dans un état funeste d'enfance industrielle et politique" (*Les chemins de fer en Italie*).

La réalisation d'une correspondance postale entre l'Europe et l'Inde, à travers la Mer Rouge (qui a permis de réduire de 6-7 mois à 6 semaines le trajet de Londres à Calcutta) répond, selon un autre politicien piémontais, Ilarione Petitti, à une "pensée d'utilité européenne".

Je donnerai ici un exemple sur l'influence étrangère exercée en Italie. Dans le domaine du Pape, l'initiative sur le plan ferroviaire est du ressort du capital français et Vatican (du 1849 au 1870 l'Etat du Pape était sous le protectorat français) et en eut affaire la "Credit Industriel et Commercial", qui dominait la Société "Pio-Centrale". L'action du groupe Rothschild dans la réalisation des chemins de fer italiens après 1860 est assez célèbre, mais il faudrait avoir le cadre européen de l'activité des Rothschild (je connais trop peu ce thème; peut-être cela existe).

En ce qui concerne la technique: les travaux de réalisation d'un des premiers chemins de fer en Toscane sont dirigés par un fils de Stephenson. En Sardaigne, a eu lieu en 1856 le projet Bonnard pour la colonisation et la réalisation des chemins de fer de l'île, et sept ans plus tard, en 1863, la construction du réseau ferroviaire de la Sardaigne fut confiée à une société de capitalistes anglais, à la quelle furent cédés 200.000 hectares du domaine collectif. L'initiative échoua, mai je pense que il faudrait avoir un tableau des "maganilles" eventuelles et des échecs, qui ont eu lieu dans les pays attardés.

En 1854 la Guttaperca Company (après Glass, Eliot & C.), anglaise, réalisa le premier câble sous-marin de l'Italie à la Sardaigne en passant pour la Corse; six ans après, le gouvernement italien approuva la convention pour la construction et l'exercice d'un câble sous-marin, cette fois de la Sicile à la Sardaigne, toujours sous la direction de la Glass, Eliot & C.

Les efforts qui furent tentés par les pays moins développés pour combler leur désavantage, ont eu notamment un certain impact sur le déclin du libéralisme et sur la montée du protectionnisme à la fin du XIX^{me} siècle.

Dernière remarque. Je ne sais pas s'il y a un étude scientifique sur l'autre grande initiative "multinationale" liée à l'entreprise de Suez, de la "Malle des Indes". Trois pays ont essayé, de toute façon, d'obtenir le passage de la "Malle" sur leur territoire ainsi que l'embarquement et débarquement dans leurs ports: la France (par Marseille), l'Autriche (par Trieste) et l'Italie, que l'emporta en 1872, lorsque le chemin de fer arriva à Brindisi, ce qui permit d'abrégéer d'un jour le voyage vers les Indes.

Albert Carreras

Transport History and the Location of Economic Activity

The interest in transport networks has been linked for many years to the social savings paradigm, i.e., transport and economic growth. There have been many other research agendas since then, but they are mainly related to three strands: transport and history of technology, transport and urban history, and transport and business history. I would like to make a case for the relevance and urgency of putting more efforts (from the side of transport historians) into the field of geography, i.e. the location of economic activity.

For many years, the actual location of the transport networks has been irrelevant. When the problem was economic growth, it was the aggregate effect which was important. National statistics were compiled and, when necessary, they were based on local information-but only as building blocks or proxies, never for their own sake. When the problem was technological change, each transport mode was analyzed from a new perspective, but the actual location was completely irrelevant. The dominating element was the succession of technical improvements. Even within the framework of “large technical systems”, it was the operation of the system that was promising, and the combination of all the elements into a system attracted most of the attention. The actual location was again irrelevant. Business historians were slightly more open to consider locational choices insofar as they were of immediate relevance for the profitability or performance of a company. But, generally speaking, this was a marginal question. Financial strategies and commercial policies used to be far more important. Even urban history was insensitive to large locational problems, mainly because once you accept the urban framework, the problem of location is confined within the town.

There should be something like a regional approach to transport history opened to locational problems. It barely exists because of the overwhelming predominance of the previous approaches. Regional transport history normally

is clones the social savings approach or the economic development one, or it focuses on business or technological aspects. I do not want to be too much critical of this, because regional transport histories have been more sensitive to problems of location. Indeed, histories of regional development have usually been interested in clarifying locational problems. Generally speaking, regional development is a locational strategy.

Nevertheless, at the regional, at the national and at the continental level, there is a clear need to understand why things are where they are and which was the role of transport networks in altering the locational patterns.

But, why should we worry at all about location ? Well, mainly because the focus of economic activity is implicitly at the very core of any research agenda-even more than growth. What matters for let us say, Italian historiography, uses to be why Italian performance hasn't been better-or why it has been so good. In both cases the implicit assumption is that what matters is the location of growth in that tiny and lovely fraction of the world. The location of growth elsewhere is indeed uninteresting and only academic politeness obliges us to pay attention to the growth interests of other countries.

Some authors have put location at the core of their research. It was the case of Braudel and all the research done around the theme of the core areas of the European economy during the Early Modern times. Wallerstein or De Vries have elaborated extensively on this.

Recently economists have rediscovered space (Krugman). They had for a long time paid attention to space as a friction, i.e., as a cost, and their models were sophisticated but normally not in sympathy with locational problems. Regional economics was a branch of economics like industrial economics or public finance. Only when the specialists in international economics have begun to think intensively about the problems of changing competitiveness they have been obliged to come to grips with the fact that location matters.

It is impossible to play with the idea of developing national economies without paying attention to the development of economic activities within specific locations namely nations (and to the profit of people living there). The same holds for regions and for towns. In practical terms, the question of

promoting welfare boils down time and again to the problem of inducing growth on particular places on the earth.

Here comes transport history. Transport development used to be one of the most powerful ways of attracting growth to a particular place. It is not the only way, of course. But it is always one of the critical factors for the location of economic activities. Everything being equal it becomes the most critical factor. By its very nature, transport is an investment space-specific. It always creates path-dependencies, to be more precise space-dependencies. Students of transport history are ideally well placed to contribute to the upsurge of academic interest in the locus of economic activity.

What does this imply ? First of all, some switch (or diversification) in emphasis. The “where” has to become a problem to solve and not a given exogenous fact. A lot of transport research focused on the “what”, the “when”, the “how” or the “how much”. A bit of “where” is acutely needed. Certainly, geographers do this. But, are we sure that they are asking and answering the same questions that may interest us ? The historical aspect of the “where” is critical. Geographers have always been better placed to solve problems related to location-although they use to forget this in their recent academic production. Historians have clear advantages to trace the historical and changing evolution of location.

In some sense I am making a case for a “regional” approach to European transport history-and by regional I mean “location sensitive”. This may remind us of the Pollard proposal of twenty years ago: let's look at European industrialisation in a regional way. The outcome of the Pollard exercise, although incomplete, has been a much more comprehensive assessment of locational factors in the development of European industrialization. Any development of a location-sensitive transport history has to build on these foundations.

Even urban and business history should be highly useful for the new approach. De Vries and Hohenberg and Lees masterfully showed ten years ago how the development of the urban network was dependent on general economic development and also framed it in space. A nineteenth-century replication of De Vries' exercise may open many avenues for a new

understanding of locational patterns, particularly if an eye is kept open to transport developments.

Business historians have expressed some foundations of the dynamics of network expansion (think of Chandler, Caron, etc.). It is amazing that the overabundant information about transport companies has been underresearched from this point of view. We could think of mapping the development of the system of transport companies to find out the rationale for many locational decisions.

I hope that the systematic mapping of the early stages of development of the European railway network may help to enhance our capacity to focus on locational problems. At the European University Institute we are trying to contribute to a new perception of the critical problems in transport history. Some of the reports presented here are congenial to this approach. The use of mapping software (Atlas.Gis in our case) has been very helpful.

René Leboutte

Le rôle déterminant du rail dans la genèse des bassins industriels. Le cas de la Haute-Silésie au 19e siècle

1. Richesses naturelles, pauvreté des moyens de transport

Le facteur spatial est crucial dans la genèse des bassins industriels européens. S'il n'est pas besoin de rappeler que les facilités en matière de transport de produits pondéreux ont fait la fortune des bassins britanniques, en revanche, le cas de la Haute-Silésie montre à quel point un bassin, pourtant richement doté en matières premières et ayant joui d'une industrialisation précoce dès l'aube du 19e siècle, a souffert de sa "continentalité" et, de plus, d'une histoire géopolitique particulièrement tourmentée³³.

Le plateau de Haute-Silésie se situe sur la ligne de séparation des bassins hydrographiques de l'Oder et de la Vistule, de sorte qu'il est dépourvu de voies navigables. Ce plateau sablonneux constitue néanmoins un point stratégique car il est à la convergence de plusieurs routes anciennes: celle reliant Wrocław à Cracovie, par Oppeln, Gliwice et Bytom, et qui mène à l'Ukraine; celle, qui vient du Danube et passe par la Porte de Moravie, avant de se scinder en deux embranchements à la sortie d'Ostrava: l'un longe l'Oder en direction de Wrocław et l'autre emprunte la vallée de la Vistule. Jadis, ces routes étaient sillonnées par les marchands, mais la guerre de Trente Ans fut fatale pour ces courants commerciaux et, au 18e siècle, elles n'offraient guère d'intérêt pour l'essor industriel³⁴.

33 A ce propos voir: *Industriegeschichte Oberschlesiens im 19. Jahrhundert. Rahmenbedingungen, gestaltende Kräfte, infrastrukturelle Voraussetzungen, regionale Diffusion*, a cura di T. Pierenkemper, Wiesbaden, Harrassowitz, 1992.

34 R. Hartshorne, *The Upper Silesian Industrial District*, dans "Geographical Review", t. 24, New York, 1934, pp. 423-438; N.J.G. Pounds, *The Upper Silesian Industrial Region*, Indiana University Press, Bloomington, 1958, pp. 1-14; I. Pietrzak-Pawlowska, *Die polnischen Gebiete in der Periode der europäischen industriellen Revolution*, dans "Studia historiae oeconomicae", UAM, vol. 5-1970, Poznan, 1970, pp. 173-190.

Région ingrate donc, mais non dépourvue d'industries. En 1703, un premier haut fourneau, utilisant le charbon de bois, est construit à l'initiative d'un magnat local. Au milieu du siècle, la métallurgie se développe lentement dans le sud silésien, à Pszczyna et Raciborz, tandis que le fer produit près de Czestochowa y est acheminé afin d'être transformé en produits finis³⁵. Plus que la sidérurgie cependant, le véritable germe du futur bassin silésien réside dans l'exploitation des mines de non ferreux de Bytom où le gisement charbonnier emprisonne en son sein minerais de zinc et de plomb. Plus au nord, près de Tarnowskie Gory, minerais de galène, d'argent et de fer affluent. Ces richesses devaient être exploitées sur place vu que la région était sévèrement pénalisée sur le plan des transports.

Ayant conquis une partie de la Haute-Silésie en 1741, Frédéric II de Prusse y a encouragé le développement industriel. Le maître d'oeuvre est Friedrich Wilhelm, Graf von Reden, nommé en 1779 directeur de l'Oberbergamt de Breslau. Ayant fait ses études à Göttingen, von Reden a visité les régions minières d'Europe occidentale et son objectif est de faire des domaines fiscaux silésiens un noyau industriel moderne. Afin de relancer l'exploitation du zinc et du plomb, il a acquis une machine à vapeur anglaise pour la mine de plomb de Friedrichsgrube près de Tarnowskie Gory en 1788. Suivant les conseils de Wilkinson, il a fait construire un haut fourneau à Gliwice qui est mis à feu 1796 sous la direction du maître fondeur écossais, John Baildon qui a travaillé aux Carron Works à Falkirk en Ecosse. Ce fourneau au coke est le premier à avoir fonctionné avec succès sur Continent. Quant à la technique du puddlage-laminage, elle est introduite à la fin des années 1820.

Pour assurer ce démarrage industriel, un problème reste à résoudre: le transport. En 1806, un canal est ouvert pour relier les mines de charbon à coke de Zabrze aux hauts fourneaux de Gliwice; après 1812, un nouveau canal relie cette ville industrielle à l'Oder par la vallée de Klodnica et, via l'ancien canal Oder-Sprée (1699), le charbon peut enfin atteindre Hambourg³⁶.

- 35 W. Długoborski, *The Pre-capitalistic and Early-capitalistic Iron Industry in Poland in the Light of the Latest Researches*, dans "Studia historiae oeconomicae", UAM, vol. 5-1970, Poznan, 1970, pp. 191-214 (pp. 193-194); T. Pierenkemper, *Die schwerindustriellen Regionen Deutschlands in der Expansion: Oberschlesien, die Saar und das Ruhrgebiet im 19. Jahrhundert*, dans "Jahrbuch für Wirtschaftsgeschichte", 1992/1, Berlin, 1992, p. 44.
- 36 N.J.G. Pounds, *The Upper Silesian Industrial Region*, pp. 24-36; R. Hartshorne, *The Upper Silesian Industrial District*, pp. 423-438; W. Długoborski, *The Pre-capitalistic and Early-capitalistic Iron Industry in Poland*, pp. 191-214.

2. La géographie d'un nouveau bassin industriel

Les implantations industrielles ont été choisies à proximité des gisements charbonniers, créant ainsi les fondements de la structure verticale de la sidérurgie moderne : charbon, minerais, haut fourneau, fabriques de fer. Charbon et coke ont provoqué un mouvement de concentration irrésistible: le triangle industriel créé par l'administration prussienne (Gliwice-Tarnowskie Gory et Zabrze-Krolewska Huta) correspond déjà aux limites actuelles du district industriel dense. Les établissements excentriques par rapport à ce noyau et trop éloignés des gisements charbonniers étaient condamnés à végéter³⁷.

Cette industrialisation précoce est pourtant fragile car elle repose sur l'industrie du plomb et du zinc qui s'est développée au cours des deux premières décennies du 19^e siècle. En 1828, la grave crise de l'industrie du zinc a durement frappé la Silésie et a répercuté ses effets sur l'exploitation charbonnière qui vit en symbiose avec cette activité. En effet, le charbon de la Silésie prussienne ne convenait guère à la sidérurgie car il s'agit d'un charbon à forte teneur en gaz (24-33%) utilisable pour les machines à vapeur et le chauffage domestique. Seul le charbon de Zabrze est cokéfiable. En revanche, il convient au puddlage, une opération qui exige de grandes quantités de combustible.

Dès lors, l'avenir charbonnier est lié au chemin de fer: soit comme combustible des locomotives, soit comme produits d'exportation vers Berlin et la Baltique.

Deux éléments ont donc eu un rôle stimulant dans l'essor prodigieux des charbonnages de la Silésie allemande. En 1842-1846, le chemin de fer relie Breslau à Myslowice en passant par Opole, Gliwice et Katowice et atteint Cracovie. En 1848, cette ligne fait la jonction avec celle de Varsovie. Au début des années 1850, la Haute-Silésie brise ainsi un isolement que le canal reliant

37 Ainsi, par exemple, l'entreprise sidérurgique d'Etat de Zagwizdzie (Opol), située dans la partie nord-est de la Haute-Silésie avait besoin, en 1845 comme au début du siècle, de 3 tonnes de minerai de fer et d'une quantité au moins équivalente et non compressible de charbon de bois pour produire une tonne de fonte, alors que les usines nouvelles de Krolewska Huta et de Gliwice, fonctionnant au coke amélioraient sans cesse leurs performances: en 1805, une tonne de fonte nécessitait 3.1 tonnes de minerai et 1.2 tonne de coke (W. Dlugoborski, *The Pre-capitalistic and Early-capitalistic Iron Industry in Poland*, pp. 200-202; voir aussi N.J.G. Pounds, *The Upper Silesian Industrial Region*, pp. 97-99).

Gliwice à l'Oder n'a pas pu réduire. Grâce au rail, le charbon, le fer, le plomb, le zinc peuvent désormais pleinement profiter de l'ouverture assurée par le *Deutscher Zollverband* (1834)³⁸.

Les cartes du réseau ferroviaire interne au bassin silésien montrent que le chemin de fer s'est démultiplié en d'innombrables diverticules³⁹. L'avancement des lignes ferroviaires s'accompagne ainsi de l'ouverture de nouveaux puits de charbon et de hauts fourneaux. Aucune mine importante n'est exploitée à plus de 8 kilomètres du rail⁴⁰.

A partir de l'épine dorsale Gliwice-Myslowice (1845-1846) s'articule durant la décennie 1860 une série de chemins de fer à voie étroite qui desservent les mines et usines. La carte de 1890 montre que la densité du réseau interne au bassin n'a rien à envier à celle de la Ruhr.

3. L'impact de la géopolitique

La partition de la Haute-Silésie entre la Prusse, l'Autriche-Hongrie et la Russie a entraîné un développement économique différentiel. La Prusse, qui possédait la plus grande partie du territoire, a créé un bassin industriel cohérent, tourné vers l'ouest (Breslau, Berlin) et qui, bien que différente sur le plan de la structure industrielle, a contrebalancé celui de la Ruhr. Par contre, la partie russe et celle autrichienne sont demeurées arriérées, sur le plan industriel, durant tout le 19^e siècle.

38 T. Pierenkemper, *Die schwerindustriellen Regionen Deutschlands in der Expansion*, pp. 44-48; W. Długoborski, *The Pre-capitalistic and Early-capitalistic Iron Industry in Poland*, p. 203; N.J.G. Pounds, *The Upper Silesian Industrial Region*, pp. 62-77.

39 Pour la relation ferroviaire de la Silésie avec les réseaux environnants, voir, outre les travaux d'Andreas Kunz, la communication suivante: Z. Landau-W. Morawski, *The Influence of Political Factors on the Development of the Transportation Network in Poland, Lithuania, Byelorussia and Ukraine from the End of the 18th Century*, Colloque de San Miniato European Networks (XIXth-XXth Centuries). New Approaches to the Formation of a Transnational System, mai 1993 (DOC. IUE 128/93, col. 25, European University Institute).

40 La démonstration du lien étroit entre chemin de fer et industrie est faite par M. Frank, *Przyczynek do badania wydobycia węgla w Polsce na tle rozwoju sieci kolejowej w Śląsko-dąbrowsko-krakowskim Zagłębiu Węglowym do pierwszej wojny światowej*, dans *Zeszyty Naukowe Wyższej Szkoły Ekonomicznej w Katowicach*, t. I, 1957, pp. 1-35; N.J.G. Pounds, *The Spread of Mining in the Coal Basin of Upper Silesia and Northern Moravia*, dans "Annals. Association of American Geographers", t. 48, 1958, pp. 149-163.

La défaite allemande et austro-hongroise et la disparition de l'Empire russe ont posé en 1918 la question du découpage géopolitique de la Silésie. La Convention de Genève fixa en 1922 une nouvelle frontière qui sacrifiait l'unité économique de la Haute-Silésie au profit d'une unité ethnique très relative. La frontière a tranché le triangle industriel lourd en deux parties et, pire encore, elle a divisé 11 des 22 complexes industriels. Les mines sont séparées des fours à coke et des hauts fourneaux, les ateliers de laminage et de finition des aciéries et celles-ci des hauts fourneaux⁴¹.

La Convention de Genève a bien prévu des échanges de matières premières et de produits semi-finis de part et d'autre de la frontière. Du côté polonais, où se trouvent la plupart des houillères et où une production moyenne annuelle de 33 millions de tonnes dépasse les besoins locaux, il est prévu d'exporter du charbon vers la Haute-Silésie allemande. En réalité, cette coopération a rapidement été court-circuitée par l'Allemagne qui, au mépris de la Convention de Genève, s'est lancée dans une politique d'autarcie. En rationalisant et restructurant ce qui leur reste des anciens complexes silésiens, les industriels allemands sont parvenus en quelques années à fonctionner en toute indépendance. L'Allemagne a conservé une proportion plus importante d'entreprises sidérurgiques que de mines, mais ces établissements sidérurgiques sont mal situés pour permettre un jeu égal avec la Ruhr et la Rhénanie. Une fois encore, la question des transports se trouve au cœur de l'économie régionale silésienne. Dans la partie allemande, un tiers du minerai de fer provient de Suède par le port de Stettin; des minerais viennent aussi de Basse-Saxe et de Bavière. Ces matières premières sont acheminées par rail et par le canal de Gliwice⁴².

Du côté polonais, la situation des industries est pire encore, car la Silésie polonaise est, en 1922, un assemblage de trois bassins industriels qui se sont développés de manière distincte au 19^e siècle et qui, de ce fait, n'ont pas formé une véritable unité nouvelle: la Dabrowa qui reste le noyau de base; le sud-est repris à l'empire austro-hongrois; l'ancienne partie allemande de la Haute-Silésie (Katowice). La nécessité de restructurer et de ré-organiser tout l'appareil industriel de la Silésie polonaise, imposée par la coupure brutale d'avec la Silésie allemande, a eu pour effet de charpenter un ensemble de

41 N.J.G. Pounds, *The Upper Silesian Industrial Region*, pp. 161-164.

42 N.J.G. Pounds, *The Upper Silesian Industrial Region*, pp. 165-169; J. Popkiewicz, *Die Wirtschaft Schlesiens unter der Herrschaft der deutschen Kapitalisten*, dans "Studia historiae oeconomicae", UAM, vol. 4-1969, Poznan, 1970, pp. 81-98.

bassins jusque-là divisés par les anciennes frontières imposées au début du 19^e siècle⁴³. Ré-organisation réalisée non sans peine. Privée des capitaux allemands, la Silésie polonaise a heureusement pu compter sur l'apport de capitaux français surtout et aussi américains, afin de réaliser les investissements indispensables au redéploiement économique.

La production charbonnière dépasse les besoins d'un pays largement agricole au niveau de vie peu élevé et se heurte à la politique d'autarcie allemande. La bataille pour les débouchés a vu s'affronter deux parties du même bassin: les charbonnages silésiens et ceux de la Dabrowa, lutte fratricide qui n'a été aplaniée qu'en 1925 par un accord à l'amiable.

Au même moment, l'Allemagne cesse complètement d'importer le charbon polonais. La Silésie est alors sur le point d'étouffer lorsque débute, providentiellement pour ce bassin, la grande grève des mineurs britanniques en 1926. Du coup, le marché du Nord de l'Europe s'est tourné vers la Silésie polonaise⁴⁴. En 1930, un accord commercial avec l'Allemagne permit au charbon polonais de rentrer sur le marché allemand. Le bassin silésien était sauvé, d'autant plus que dans les années 1930, la Scandinavie et la Baltique assurent la moitié des exportations polonaises. Cette situation s'est maintenue jusqu'en 1937⁴⁵.

Cette nouvelle orientation du commerce charbonnier polonais a nécessité la construction de nouveaux moyens de transport. Jadis, le charbon était acheminé vers le Nord par l'Oder et Stettin, ce qui n'est plus possible en raison de l'attitude allemande. Comme la haute Vistule est non navigable en amont de Cracovie, les Polonais ont construit en 1931 une ligne de chemin de fer reliant Katowice à la Baltique. Comme le port de Danzig (ville libre sous protection de la Société des Nations depuis 1919) n'était pas adéquat pour le commerce

43 S. Misztal, *Changes in Distribution of Industry in the Area of Poland in the Years 1860-1965*, dans "Studia historiae oeconomicae", UAM, vol. 5, 1970, Poznan, 1970, pp. 231-241.

44 De 11.4 millions de tonnes en 1924, les exportations de charbon polonais vers l'Allemagne tombent à 8.2 millions de tonnes en 1925 (J. Jaros, *Der polnische Kohlenbergbau in Polen der Zwischenkriegszeit und in Volkspolen*, dans "Studia historiae oeconomicae", UAM, vol. 4-1969, Poznan, 1970, pp. 157-169).

45 A propos de cette conquête des marchés du Nord de l'Europe par les charbons polonais, voir: P. Salmon, *Polish-British Competition in the Coal Markets of Northern Europe 1927-1934*, dans "Studia historiae oeconomicae", UAM, vol. 16, 1981, Poznan, 1983, pp. 217-243; J. Jaros, *Der polnische Kohlenbergbau in Polen*, pp. 157-169; A. Jezierski, *Conditions de développement de l'industrie en Pologne dans les années 1918-1939*, dans "Studia historiae oeconomicae", UAM, vol. 5-1970, Poznan, 1970, pp. 269-280.

charbonnier, un nouveau port a été érigé à Gdynia, avec l'aide de capitaux français⁴⁶.

Ces quelques lignes démontrent toute l'importance du rail dans la structuration des bassins industriels. Certes, la Haute-Silésie est un cas limite, mais non exceptionnel lorsqu'on pense au développement du Donbas à la même époque.

46 N.J.G. Pounds, *The Upper Silesian Industrial Region*, pp. 171-176.

Alberto Schram

Transport History and the Use of Portable Geographical Information Systems

Since most social and economic data have a geographical dimension, the benefits of presenting them on a map are evident. Up to now, however, historical atlases have been interested in political and military facts⁴⁷. Hopefully, the wider spread of portable geographical information systems (GIS) will stimulate social and economic historians to produce their results in the form of a map⁴⁸.

Transport historians have a special interest in mapping, since transport is a particularly space specific concept. The space dimension can be seen either as a point or as a region. Transport flows, for example, can be displayed as vectorlike images, since in most cases the starting point, the direction and the length is known. In many cases, a third variable (e.g. the width of the line) showing the size of the flow needs to be added. In most modern portable Geographical Information Systems (GIS) these kind of maps can easily be made.

In this paper I would like to make clear what the possible costs and pay-offs are of using a GIS for social and economic historians with an interest for transport⁴⁹. Especially, the question how to use a GIS as an independent tool of analysis deserves special attention. In most cases a GIS is used as a mere presentational devise for old fashioned statistics. I summarise my experiences with a GIS for transport history application, in 3 points:

47 A recent computerized historical atlas (Centennia) is no exception to this rule.

48 A portable GIS is one that can run on a powerful microprocessor, in contrast to other systems than need a mainframe computer.

49 On the general use of computerized cartography for historical purposes, see *Coordinates for Historical Maps*, ed by M. Goerke, Göttingen, Max-Planck Institut, 1994.

1. In my Ph.D. thesis I analyzed traffic flow in Northern Italy in relation to other socioeconomic variables⁵⁰. The historical mapping laboratory at the European University Institute, set-up by Michael Goerke proved extremely useful and in the end I managed to include more than 40 maps in my thesis. I also took great advantage from the fact that in the same laboratory a GIS with the opening dates of railways was created. This European Networks Project led by Prof. Albert Carreras is one of the path breaking- applications of a GIS to historical material, and, moreover, also has historical transport prospective.

I would like to stress however that each research questions needs a customized GIS. It was an interesting experience to see that both projects although very similar needed a different GIS. For my thesis on railway traffic I needed maps which used the division of sections used by a particular railway company, whereas the networks project used a completely different division into sections according to the opening dates. This respect for the structure of the sources which historians usually have, leads to presentations which use different geographical units and consequently need a tailor-made GIS.

2. Especially, in the case when variables concerning lines and others regarding provinces need to be compared, a GIS becomes invaluable. When there is no meaningful way of harmonizing the two variables a graphical presentation can suggest relationships which no table could show. I must admit that in my thesis I fell short of using it as an independent tool of spatial analysis. Although I related traffic flow on railway lines to other variables related to provinces and cities, I did not create a map showing both.

3. I will briefly enumerate the experiences with the particular GIS used, (Atlas-GIS). With this program a great variety of maps can be produced, although maps which suggest a third dimension can not be created.

Sharing the experience with other researchers taught me that it was much quicker to perform selections separately with a database program and mapping them with the Atlas program. Since the Atlas program distinguishes between a geographical file (the map) and an attribute file (the database), this procedure is possible. The built-in database feature of Atlas-GIS proved to be too slow for even a moderate size GIS.

50 A. Schram, *The Impact of Railways. Growth and Development in the Northern Italian Economy 1856-1884*, Florence, European University Institute, Ph.D. thesis, 1994.

For historical purposes it is essential that new geographical object can easily be added by the user. Contemporary European maps simply are inadequate when one goes back in time more than about 50 years. Atlas-GIS's capacity of digitizing new objects is in fact one of its strongest advantages for historians compared to other packages. It is a pity, however, that there is no feature for dynamic mapping, which could be realized by incorporating a slide-show feature in the program. By using an external program, however, this dynamic maps easily he realized.

In sum, the use of a GIS can help the transport historian to easily analyze questions that in the past required considerable amounts of time. Moreover, a GIS can help to structure the analysis better and create more attractive and meaningful presentations.

Stefano Maggi

The Railways in Italian Africa

The function of railways in ex-Italian colonies of Africa has been completely forgotten by historiography, although they had a remarkable function for the colonization of the territories. The lines built by the Italians were the result of accurate technical studies in the field of inland transport, especially the Eritrean railway, that was the highest in Africa when it was constructed. All the lines had a particular narrow gauge of 95 centimetres, different from all the other colonial railways, that made it impossible to join the Italian lines with the networks of other countries⁵¹.

The first Italian railway in Africa was built in Eritrea in 1888, during a military campaign against the emperor of Abyssinia Johannes IV. It joined the harbour of Massawa with the fort of Saati and was 30 kilometres long. In this occasion the Italians used the railway as an "instrument of war"⁵².

The railway building was continued when the governor Ferdinando Martini arrived in the colony in 1897. But the work went on very slowly, because of the lack of available funds from the central government of Rome. While a large quantity of money had arrived in Africa to fight against the Abyssinian emperor, in time of peace it was very difficult for the governors of Eritrea to obtain funds for the colonization and for the making of transport facilities.

51 Only few lines were built by the Italians in their territories: in 1940 there were in Africa more than 76.000 kilometres of railways. The most part, 41.000 kilometres, had been built in British colonies; 16.000 kilometres in French territories, almost 5.000 in Belgian Congo, 4.000 in Portuguese possessions and only 1.700 in Italian Africa. That just represents the 2 per cent of all the railways built in the continent (R. Astuto, *Il problema ferroviario dell'Africa*, Milan, 1943, pp. 222-223).

52 *La ferrovia Massaua-Saati. Relazione dell'ingegnere Emilio Olivieri. Direttore dei lavori*, Roma, 1888, p. 15.

Therefore, the railway from Massawa reached the capital Asmara, situated on the table-land, only in December 1911. Then the Eritrean line was slowly pursued in the table-land towards the zone of agricultural development and in the direction of the frontier with Sudan and Ethiopia, but it stopped near Agordat, 344 kilometres distant from the sea and never arrived at the boundaries.

The railway always maintained a basic importance in the colonization of Eritrea. Some attempts of agricultural development were made possible by the presence of the railway, others failed for the delay in its construction. Moreover, the train completely changed the system of transports of the region: the long caravans, that had always conveyed the goods traffic between the Abyssinian Empire and the Red Sea, usually stopped in the table-land in the proximity of a railway station. From here the merchandise continued on train towards the Massaua harbour.

Another railway in Italian East Africa was built in Somalia, in the Twenties, to join a zone of colonization with the harbour of Mogadicho. The line was completed in 1927 as far as the Village Duke of Abruzzi, where Luigi di Savoia created the largest agricultural settlement of all Italian colonies. Therefore, the railway of Somalia, which was 113 kilometres long, was especially built for economic reasons.

The last Italian colony in Africa was Libya, occupied after a war against the Ottoman Empire in 1911-1912. In this country the railways, that had a military origin, reached a length of 270 kilometres in Tripolitany and 164 in Cirenaica, the eastern part. They were divided into several branches, which linked the capitals Tripoli and Bengasi with the main oasis, where took place an agricultural colonization.

Usually begun for a military purpose, except for Somalia, the railways in Italian colonies were also used for transportation of travellers and especially of goods: the most important infrastructure always remained the Eritrean line.

In 1936, also the Jibouti-Addis Ababa railway in Ethiopia passed under Italian rule⁵³. It was the longest line of the Horn of Africa, nearly 800

53 It was begun in 1897 and was opened as far as Dire Dawa in 1902. In 1917 it was completed for Addis Ababa. See R Pankhurst, *The Franco-Ethiopian railway and its history*, "Ethiopia Observer", 4, 1963, pp. 342-379.

kilometres, and was built with French capital, causing a long international dispute among Britain, France and Italy, at the beginning of the XX century⁵⁴.

All these Great Powers wanted a control in the railway company because the line had a very important political function: it penetrated the interior of the Abyssinian Empire and transported the most part of the foreign trade. In order to stop the international controversy, an agreement was reached with the "tripartite treaty" of 1906: it divided Ethiopia into three zones of influence. In conformity with this agreement, never accepted by the emperor, the Italians had the possibility of building a railway across the Abyssinian Empire, passing in the western part of the country, between Addis Ababa and the frontier; the French could pursue the line from Dire Dawa to Addis Ababa and the British could build a prosecution of this railway from Addis Ababa to the Nilo Valley. The "tripartite treaty" was a typical example of railway imperialism⁵⁵.

During the whole period of Italian rule in Africa, many projects were presented for creating a railway network in each colony; these projects were never realized because funds were lacking. A few plans for international railways were elaborated in Italy against the corresponding proposals of other European countries. The most important of these plans were the projects for a Transaharian railway.

In opposition to the French programmes for a line across the desert, the Italians had the intention of collecting the traffic for the Sudan and the Central Africa, beginning a railway from Tripoli and following the ancient caravan routes.

The French and the Italian plans for Transaharian railways were linked to several objectives among which the extension of political and economic influence was very important⁵⁶. The train was considered as a tool for the

54 See S. Bekele, *The Ethiopian railway and British finance capital, 1896-1902*, "Africa", 1991, pp. 351-374.

55 Ronald E. Robinson has written: "Powers soon used railway loans and concessions to stake out spheres of influence in other continents and cajole their rulers into subordinate alliance". (*Railway imperialism*, ed. by C.B. Davis and K.E. Wilburn jr., New York-Westport-London, 1991, p. 1).

56 See D.R. Headrick, *The tools of Empire. Technology and European imperialism in the XIX century*, New York-Oxford, 1981, p. 200; I. Mazières, *Le transsaharien: un imaginaire du chemin de fer*, "Revue d'Histoire des Chemins de Fer", 4, 1991, p. 54.

building of an “informal empire”⁵⁷. However, the projects had a prohibitive cost and they were never completed⁵⁸.

Apart from international disputes, the function of railways was essentially connected with the “mise en valeur” of colonies. The network of pre-colonial footsteps could not allow the development of cultivation and the commercial opening of colonized countries.

Especially in the first years of colonization, the railways were fundamental in the agricultural growth of African countries, in the settlement of European population and in the growth of commerce. The train was also important in the social modernization of the colonies: for the first time many African people established a direct contact with a product of the industrial revolution. As it happened in Europe in the first half of the XIX century, in Africa the train brought an unknown speed and security of communications, becoming itself a symbol of progress and modernity, before the diffusion of the motor-car.

All the railways built in Italian Africa were paid for by the Italian State or the colonial governments, while no private enterprise financed the projects: therefore, the story of the lines in Eritrea, Somalia and Libya shows the feature of Italian colonialism, which was connected to political more than economic reasons.

A final consideration: no one of the railways built by the Italians is still in practice. The line of Somalia, dismantled by the British army in 1942, was the first to end the service. The remaining railways have continued their activity until 1962 in Tripolitania and Cyrenaica, limited to passenger transport, and until 1975 in Eritrea, where the rails were removed during the guerrilla against Ethiopia. On the contrary, the Jibouti-Addis Ababa railway is still quite active.

57 *Railway imperialism*, cit., p. 2.

58 Headrick, *The tools of Empire*, cit., p. 201.

Hilmar Kaiser

**Some comments on German Railway Projects in
the Ottoman Empire, 1890-1918**

It is still quite common to discuss the history of the Bagdad Railway project in terms of diplomatic and financial history, although about 20 years ago the need to understand the impact of the railways was stressed⁵⁹. Certainly, the imminent political importance of railway construction can only be understood in the context of the Eastern Question, for it was railway building which ultimately defined the spheres of influence of the major European powers within the Empire. These spheres formed the basis for the post-World War I borders in the Middle East⁶⁰. However, even this political history has to take the issue of transport into due consideration, for two reasons in particular. First, while the first lines in the Asiatic provinces were built to connect fertile coastal districts and their produce with international markets, the German railway projects were designed to link the interior provinces with the capital Constantinople.

Secondly, this was mainly a strategic choice. The line was to allow the rapid mobilization and transport of soldiers from the Asiatic provinces to the European ones. In a period of frequent wars in the Balkans, this was a vital factor in the survival of the Ottoman central state. Moreover, the line strengthened the control of the capital over the provinces, which were threatened with seizure by the European powers or by the formation of the base of the independence movements of the non-Turkish population.

The fact that these military considerations did not harmonize with the economic resources was obvious from the beginning. The inland districts to be linked by rail were comparably sparsely populated and even more poorly

59 H. Mejcher, *Die Bagdadbahn als Instrument deutschen wirtschaftlichen Einflusses im Osmanischen Reich*, "Geschichte & Gesellschaft", 1, 1975, pp.447-481.

60 R.I. Khalidi, *The Economic Partition of the Arab Provinces of the Ottoman Empire Before the First World War*, "Review", 11, 2, 1988, pp. 251-264.

developed. Their economic potential could not finance the construction and operating of a railway. Therefore, the only way of securing the profitability of the railway company was to give a kilometric guarantee paid by the Ottoman state: this was a most difficult endeavour, given the precarious financial situation of the Ottoman state. From 1882, an increasing part of this latter's revenues had been ceded to the Public Debt Administration—an international institution representing the interests of the European debtors of the Ottoman state. Given the fact that funds were low the only solution for financing the kilometric guarantee was to raise the state revenues, for instance by an increase in custom tariffs. As these tariffs were subject to international agreements, they could only be increased with the consent of the Powers. Since the railway project was the object of rival strategic considerations by these states, this consent was very difficult to obtain. In the end, the diplomatic manoeuvres delayed the actual construction of the Bagdad Railway for several years⁶¹.

Another feature of this delay was the lack of impetus on the part of the German-led group to start construction immediately. Calculating its maximum profits, the concern found it more advantageous to divide the project into a number of sections which would produce quick returns and would finance the further extension of the line. In other words, the German group was short of capital and, moreover, was attempting to invest as little as possible in it. Not surprisingly, the Ottoman government was dissatisfied with the whole affair. In the end, World War I delayed the construction of the line and the Mesopotamian sections remained unfinished.

While these features of the diplomatic and financial history of the German railway projects are well-known, the impact or performance of the operating sections of the line has been examined to a much lesser extent. The reasons for this unsatisfactory state have resulted partly from a lack of available sources. The recent opening of a large collection of documents of the former Central-Archive of the GDR, now Federal Archives Potsdam Departments, as well as access to the Historical Archives of the Deutsche Bank have allowed a substantial amount of material pertaining to the railway projects to come to light. Due to these records it is now possible to ground studies of the performance of the railway companies on a sound basis.

61 J. Manzenreiter, *Die Bagdadbahn. Als Beispiel für die Entstehung des Finanzimperialismus in Europa (1872- 1903)*, Bochum 1982 (Bochumer Historische Studien, Neuere Geschichte, Nr. 2).

The administration of the Anatolian Railway which also operated the Bagdad Railway, attempted from the very start to obtain a detailed knowledge of the economic potential of the districts it traversed. To increase its freight, it introduced an agency system in these regions, to attract cargo and to compete with the other forms of transport provided by cart and camel drivers. It in fact achieved these aims, and a considerable re-direction of cargo from the provinces of the central plateau towards Constantinople took place. Freight transport was further facilitated by the construction of a modern harbour at Haidar Pasha on the Bosphorus at the terminus of the Anatolian Railway. The new site was equipped with large silos and state-of-art devices and replaced the small harbour at Derindje which maintained a secondary position⁶².

While the special freight tariffs and modern infrastructure contributed to the raise in freight rates, the company soon began to consider the further development of the districts itself. For this purpose, it introduced an agricultural service administered by German professionals, the so-called agricultural inspectors. Their task was first to study the conditions relevant to agriculture. Secondly, they supervised a number of experimental fields along the railway lines where, mostly in the vicinity of the stations, new crops were tested. Along with these tests, the inspectors promoted the introduction of some more efficient tools, thereby promoting German products. As these efforts were successful, they were used as a model for similar Ottoman programs⁶³.

Ottoman settlement politics also contributed to the economic development of those regions in which Muslim refugees were settled. The aim was twofold. First, to establish a solid Muslim majority in the interior provinces and thereby secure the rule of the central state, and, second, to increase productivity and thus ease the Ottoman obligations to meet kilometeric guarantees⁶⁴. These settlement programs attracted the attention of radical German nationalists who were discontented with German emigration, especially to the U.S. The Ottoman Empire, with its so-called "German

62 D. Quataert, *Limited Revolution: The Impact of the Anatolian Railway on Turkish Transportation and the Provisioning of Istanbul, 1890-1908*, "The Business History Review", 51, 1977, pp. 139-160.

63 D. Quataert, *Ottoman Reform and Agriculture in Anatolia, 1876-1908*, Ph. Dissertation University of California 1973; Société du chemin de fer Ottoman d'Anatolie, *Kurzer Bericht des Kulturinspectors Scheiblich über den gegenwärtigen Stand der Arbeiten zur Hebung der Bodencultur in Anatolien*, Haidar-Pacha, 1899.

64 W.D. Hütteroth, *Ländliche Siedlungen im südlichen Inneranatolien in den letzten vierhundert Jahren*, Göttingen 1968 (Göttinger geographische Abhandlungen, 46).

railway”, offered a welcome alternative. German settlements along the lines would serve imperial German “Weltpolitik” and economic expansion. Their quite fantastic proposals attracted international attention and threatened to complicate the relations between the railway group and the Ottoman government. However, their actual impact was limited. The railway company carefully avoided any contact with these pressure groups and the only non-Ottoman settlement remained that of a group of Rumanian Jews organized by the German Zionist and colonial expert Otto Warburg at the turn of the century⁶⁵.

Ottoman settlement policies opened further economic opportunities for the railway group. In 1907, it obtained the concessions for a large irrigation project which was to turn a plain in the Konya province into a model area for the whole country. The railway-group not only built the system, but also secured its operation for itself. To take further advantage of this situation, another company was founded to offer steam-ploughing services in the district⁶⁶.

The steam-ploughing firm was an offspring of a cotton company, which had operated in the Adana province since 1904. This company tried to improve and reorganize the production, procession and trade of cotton according to German needs. Its final aim was to dominate the whole industry and expand into the Mesopotamian plains where irrigation systems and the Bagdad Railway were to create a second American South. The cotton company, although not a direct offspring of the railway companies, soon came under their control and operated within the general policy of the group. It arranged special rail tariffs for its cargoes and was able to draw heavily on the financial resources of the railways. Thus, the Adana province became the key region for German Middle East politics⁶⁷.

Up to World War I, the transport capacity of the railway was not fully employed. This situation changed dramatically after the outbreak of the war,

65 F. Dernburg, *Auf deutscher Bahn in Kleinasien. Eine Herbstfahrt*, Berlin 1892; R. Menz, *Deutsche Arbeit in Kleinasien. Reiseskizzen und Wirtschaftsstudie*, Berlin 1893; W. van Kampen, *Studien zur deutschen Türkeipolitik in der Zeit Wilhelms II*, Ph. Dissertation University of Kiel, 1968.

66 *Deutsch-Levantische Baumwoll-Gesellschaft*, Berlin, Jan. 31.1912, Protokoll der Aufsichtsratssitzung vom 31.01.1912, Bundesarchiv, Abteilungen Potsdam 80 BA 2 No. 15914.

67 Günther, Dresden, May 1910, A 9294, Auswärtiges Amt. Bonn, Politisches Archiv Türkei 197/5.

during which the Anatolian and Bagdad Railways became the major supply line for the Ottoman armies on the Palestine and Iraqi fronts. Due to their unfinished state, the lines were unable to meet all the needs of the army. Nevertheless, the railway did secure Ottoman control over the Arab provinces during the war, a result which would not have been possible without it⁶⁸.

In summer 1915 the railway became involved in a service which was entirely new: that of transporting Armenians from the western Ottoman provinces towards their mass extermination in the Syrian desert. Sheep wagons became moving coffins and stations were transformed into concentration and death camps. Railway transport had thus become a feature of genocide⁶⁹.

68 L. von Sanders, *Fünf Jahre Türkei*, Berlin 1920.

69 Rössler to Metternich, Aleppo, Jan. 3.1916 J.Nr.283 Auswärtiges Amt. Bonn, Politisches Archiv Konstantinopel 172 enclosure II; Günther to Gwinner, Constantinople, Oct. 30.1915 No.-Deutsche Bank, Frankfurt a.M., Historisches Archiv, Orientbüro 1704.

Andrea F. Saba

Italy and the Transiranian Railway

Since the end of the XIXth century there had been rumors about the beginning of the construction of a railway line in Persia, longer than 1.400 kilometers from the Caspian Sea to the Persian Gulf. The project was resumed by the first emperor of Iran's new dynasty, Reza Pahlevi, who gave way to the first negotiations in 1926, in order to build a transport system that allowed the modernization of the country, also in industrial terms.

In 1927-1928 the Americans, who held in the country a stronghold with the Millspaugh financial mission, were assigned the construction of the first two parts of the one-track line, 100 kilometers both in the northern and in the southern sides, starting from Bandar Shah and Bandar Shapur. The work of the American firms did not satisfy Iranian authorities - maybe the bribes were not large enough - and in 1932 a new organization was set up to carry on the work, by appointment of the entire management to a Dano-Swedish consortium, Kampsax, named after the two engineers who had formed it, Kampomann and Saxil. Its main duties were the gross project of the line and the selection of the firms with their detailed projects for every lot of works. Kampsax had also to check their advancement on behalf of the Persian government.

At the same time Kampsax had obtained that role, Impresit - that is Imprese italiane all'estero, a construction and engineering cartel absorbed by Iri and sold to Giovanni Agnelli and his partners in 1934 - was interested in several Iranian businesses by the Italian government which was to establish a stronger relationship with Persia, and already in September 1933 two engineers were sent in mission to waste lands with normal day temperatures between 55° and 60° C. However, in November Impresit participated as sub-contractor of Kampsax and obtained 5 lots-out of 6-of the first northern section, totalling 45 kilometers. One more lot was won in the South but was

sub-assigned by the Italians to a Persian enterprise that had previously renounced because of the lack of financial guarantees. The Italian firms Angiolini & Balocca of Bologna, Mottura & Zaccheo and Pizzagalli of Milan had been chosen in relation to their special know-how in mountain railway lines characterized by high-degree slopes and low-radius curves: the lots assigned in the Elburz Mountains, in fact were not particularly large but had tunnels for 13 kilometers and viaducts for 1 kilometer in a tract of 45, with a difference in altitude of more than 1.100 meters and a steep gradient of 28 meters in a thousand. The total income of Impresit for these works was around 150 millions of Italian lira.

At the end of November 1933, the first groups of workers arrived in Iran. There were 116 employees, 542 Italian and more than 12.000 local workers. Many other Italians—as was pointed out by the Italian diplomatic authorities in Teheran—worked under the direction of the *Compagnie belge des chemins de fer* and of other Scandinavian and also Iranian firms, forming the total of the foremen and three-quarters of the specialised labour. Among the Italians there were 60 to 70 killed during the construction of the line, the Italian lots being finished in May 1936. At that time many problems begun as the Iranians raised many difficulties about the payments. Not only did the forms not have the chance of changing the 50% of the incomes in rials to pounds, as stated in the contracts; many workers could not obtain any foreign currency in order to buy the return tickets to Italy. This situation had a solution, managed autonomously by the Italian consulate, only in 1938.

The Transiranian railway was built over a period of 12 years, from 1927 to 1938, and cost around 30 millions of pounds, absorbing the total revenues of ten years tobacco and tea consumption taxes, the most important ones of the country. A similar road system, as it has been calculated, would have cost only 525 pounds against the 35.000 pounds per mile of the railway, that had no industrial other dubious spin-offs: all the machine tools, and the materials, in fact, were brought from abroad. Moreover, the gigantic old-fashioned, single-track railway did connect only three major cities. For a comparison, goods transport costs by truck, on the route between Awhaz and Teheran, diminished from 200 dollars and two months per ton in 1920 to 50 dollars and 15 days in 1929.

Kátia Martinez

Regulation of urban public transport in Rio de Janeiro and São Paulo (1870-1930)

Recently, the historiography on public utilities has given a particular emphasis to the importance of case-studies to enable comparisons among cities of different socio-economic realities⁷⁰. This paper aims to analyse the evolution of the public utility supply sector in Rio de Janeiro and São Paulo, in the regulation framework⁷¹. The issue posed here is whether public officials were captured⁷² by private interests when elaborating public utility regulation.

Initially, the role of the executive power regarding regulation has to be defined. The form of state organisation reflects directly on utilities regulation. In Brazil, during the Empire (1822-1889), provincial governments were responsible for the concession and regulation of urban services, with Rio de Janeiro as the only exception, which, as a capital had remained under the direct control of Empire authorities. The First Republic (1889-1930) was characterised by the pursuit of power decentralisation, as the transference of public utility control to local governments⁷³. Urban modernisation attracted executive officers to observe carefully the development of public utilities in European and North American countries. Nevertheless, the absence of national guidelines regarding utility policy and the inexperience with first contracts

70 J.C. Teaford, *Public Works History*, "Journal of Urban History", vol. 10, n. 2, Feb. 1984, p.223-238.

71 The population growth of both cities during this period guaranteed investors a steady growing market. In Rio de Janeiro the population increased from 270.773 in 1872 to 691.565 in 1900 and to 1.505.595 in 1930. São Paulo in 1872 was a small city of 31.385 inhabitants, that evolved to 239.820 at the turn of the century, and 887.810 thirty years later.

72 For the concept of captured on regulation see G. Stigler, *The Theory of Economic Regulation*, in *Chicago Studies in Political Economy*. Chicago and London, University of Chicago Press, 1988 (first published in 1971).

73 In Rio de Janeiro, the municipality became in charge of the regulation on urban transportation, electric power and telephone service, although gas and illumination remained under the national responsibility.

generated problems in the sector which were engendered by misunderstandings during the elaboration of concessions.

The analysis of the regulation of urban transportation requires a survey of the sector. Generally, the tramway service adopted a similar structure of concession clauses⁷⁴. The first was conceded in Rio de Janeiro during 1856, and 1872 in São Paulo. The period of concession ranged from 15 to 35 years in the capital, and from 40 to 50 years in São Paulo. Lines authorised had exclusive rights on the assigned area but were never formalised as a monopoly. Mostly, the fare amount for each tramway ride, or a freight of 20 kilos was about 200 réis, with small variations according to zoning sectors. Governments imposed fares in their own behalf, requiring free transport for authorities, public workers and mail, and half a tariff for government freight.

Concessions usually made few technical specifications beyond the service. One referred to measures regarding safety, imposing the use of horse traction, and later electricity, in the urban perimeter, restricting the use of steam traction to the suburbs. The other measure was the employment of tracks that should remain at the street surface, to improve the influx of other means of transportation. However, the track gauge was not specified which retarded the formation of a network.

There were some clauses regarding taxation. First, concessionaires had to deposit a certain sum to obtain the concession or its renewal, and a monthly sum to afford government expenses with control. Another deposit had to guarantee eventual penalties. A very curious item was that governments formally granted the exemption of local taxes, but obliged concessionaires to contribute to charity institutions, as religious schools devoted to poor child's education. Consequently, instead of measures concerning the transport sector as a whole, authorities wanted to enlarge political prestige with charity. A substantial sum of money was also to be deposited to the government treasury, at each concession transference. This measure and the expiration of the concession if lines were not built within two years after the signature of the contract also revealed governments' concerns to avoid speculation. To

74 This generalization is based on the analysis of all São Paulo and Rio de Janeiro tramway concessions: *Documentos Referentes à organização, as Concessões, ao contratos*, etc. da *The São Paulo Tramway Light and Power Company Ltd. São Paulo, 1929 and Tramway Concessions. Companhia de Carris, Luz e Força Rio de Janeiro Light*, Rio de Janeiro, 1941.

compensate the investment the public utility sector was granted tax-free import on all machinery, equipment, tracks, cars and even horses.

While the clauses seem to be very precise at a first glance, there was a critical problem due to the absence of mechanisms that warranty a good quality of service supply. The only mechanism of pressure on concessionaires to obey clauses were penalties. Habitually, companies preferred either to contest or to pay penalties instead of improving the service quality, due to its amount. Moreover, in different occasions public officials forgave the non-payment of penalties to help companies facing financial problems, therefore lessening the importance of following rules. Rarely, clauses posed the question concerning the asset's reversion to governments when the concession period expired. It was simply ignored in most of the contracts, with the exception of a few contracts in Rio, that were never applied.

Since the setting up of the first tramway lines, several companies joined in the service; 11 existed in Rio de Janeiro and 4 in São Paulo about 1880. Throughout this decade, there was a tendency of companies to merge; over 5 companies were operating in Rio, and only one in São Paulo⁷⁵ and the tramway fare varied from 100 to 200 réis according to the section. The main problem of merged companies during this period was that governments in charge of public utilities took a very long time to uniform contract clauses, mainly because of the lack of bureaucratic organisation. Merged companies enlarged their bargaining power, and tried to capture government officials. Nevertheless, the results arise slowly, so the lack of definition regarding the concession period let companies without guarantees to return the investment. Therefore, suppliers detained essential improvements of the service generating a standstill of transport. In some extreme cases, the deficiencies came to such a point as public officials almost declared the concession as expired. Executive officers and the transport concessionaires blamed each other for the bad quality of the service, even though it was always feasible to find a negotiated solution⁷⁶.

75 In São Paulo, the *Companhia Viação Paulista* was created in 1889, but its contracts were unified only ten years later. In Rio each tramway company supplied a different area. The city centre and links to the port and railway stations were supplied by the *Companhia de Carris Urbanos*. The South of the city was supplied by the *Companhia Ferro-Carril do Jardim Botânico*, the Northwest by *Companhia Ferro Carril Vila Isabel* and the north *Companhia São Cristovão* and *Companhia Ferro Carril Carioca*.

76 *Relatório apresentado ao Sr. Diretor Geral de Obras e Viação pelo engenheiro Fiscal dos Ferro-Carris Urbanos e Suburbanos, in Anexos dos Relatórios apresentados ao Conselho Municipal pelo Dr. Prefeito Municipal nas duas sessões ordinárias de 1895*, Rio de

By the turn of the century *The São Paulo Tramway Light and Power Company* started operations, with a concession to set up electrified tramway lines, that established the section's circumscription in two kilometres, whose fares could vary from 200 to 400 réis⁷⁷. In a short span of time, the company acquired the existing one⁷⁸, and unified the contracts. The quickness was due to the political connections established by the company and a greater power in dealing, giving its importance to supplying different services. The period of concession lasted 40 years, with preference for setting-up new lines. The zoning was divided in 3 kilometres for the first, smaller than the former division, 6 kilometres for the second, 9 for the third and 3 for the following concentric zones. Fares were unified in 200 réis for each section and the company was to furnish a second class service⁷⁹. Adopting the same strategy as in São Paulo, *The Rio de Janeiro Tramway, Light and Power Company* set up in the capital in 1905, and two years later reached the control of all tramway companies, unifying contracts' clauses similar to São Paulo, in 1907. The pace of the unification of contracts clearly demonstrated that both companies captured local politicians.

The contract of the tramway service in São Paulo was modified in 1909, in exchange for the monopoly of electricity distribution. First, the zoning system was abolished, thus unifying all lines' fares in 200 réis. Also, second class fare and discounts for students were re-proposed. Although the concession included this measure, government officials never claimed the complete fulfilment of contract dispositions. These modifications did not injure the financial situation of the company. Instead, as opposed to the first years, the possibility of abolishing zones was considered to be a stimulus in the moving of inhabitants from the city centre to the suburbs, to increase the company's income⁸⁰. The contracts' modification did not state their monopoly on the tramway service,

Janeiro, Imprensa Nacional, 1895, pp. 196-199. *AMSP - Relatório Anual da Seção de Obras da Intendencia Municipal de São Paulo*, 1894, São Paulo (pp. 19-22, 87-90).

77 *Contrato para a construção de viação elétrica na capital de São Paulo*, 8 de Julho de 1897.

78 *The Companhia Viação Paulista* had serious financial problems, deriving from by the late unification of its contracts, which reflected on the quality of the service, as much as the mayor was about to apply the most radical attitude, that was to declare the invalidity of the concession, as the company did not fulfil most of the concession clauses, providing a vary bad quality of service. Finally, the government and company's management agreed that it should be forced into liquidation: E.E. De Souza, *História da Light: primeiros cinquenta anos*, 2 (org.) revista e aumentada, São Paulo, Eletropaulo, 1989, p. 38.

79 *Contrato de unificação para o serviço de viação urbana de 17 de Julho de 1901*.

80 Centro de Documentação da Energia e da Industrialização de São Paulo, onwards CEDHEI, *Annual Report of The São Paulo Tramway Light and Power Company Ltd for the year 1906*, p. 2. *Correspondência de Diretoria*, Sub-série 37: F.S. Pearson, vol. 1, letter from Walmsley to F.S. Pearson (15 de setembro de 1908, p. 93).

but companies successfully contested any other intent to enter into the urban transport business⁸¹.

The local government's tendency to incorporate tramway companies were not evident in São Paulo and Rio de Janeiro. The critical budget situation of local governments and the growing public debt made the incorporation of transport companies impossible. Likewise, this action was absent on policy making, as it would never have met the majority on the legislative or the executive power, that assured public utility investors. Regularly, companies' managers analysed legislators' temperance concerning them, often concluding that local politicians were "many able progressive men and most all of whom are our friends..."⁸². This environment permitted the strength of utilities power bargaining with the creation of the holding Brazilian Traction Light and Power Company⁸³. Since holding's foundation, most requests were promptly attended by governors, although the question of a tramway fare increase re-positioned the capture on regulation.

Due to the economic impact during wartime, tramway concessionaires were allowed to modify their timetables and to restrict distribution of free tickets for public officials⁸⁴, but, despite increasing working costs, local governments denied companies request to increase the fare value. This refusal was based on the fact that neither contract specified any fare increase. Likewise, governors feared an increase on popular protests because only then tramway fares became accessible to the lower classes.

- 81 CEDHEI-*Correspondência de Diretoria*, Sub-série 37: F.S. Pearson, vol. 1, letter from Walmsley to F.S. Pearson (1 de agosto de 1911, pp. 279-284). *Correspondência de Diretoria*, Sub-série 34: Alexander Mackenzie, vol. 1, letter from A. Mackenzie to Francisco de Castro (18 de julho de 1911, p. 467). Also in Rio de Janeiro there was a similar agreement with the government: *Termo de 30 de dezembro de 1909. Modificação dos preços de passagens nos extremos das linhas e nos carros de segunda classe e bagageiros da Companhia Ferro Carril do Jardim Botânico*.
- 82 CEDHEI-*Correspondência de Diretoria*, Sub-série 37: F.S. Pearson, vol. 1 (p. 442).
- 83 This holding achieved the control of the supply of tramways, light, power, gas, public and private illumination, and telephones in Rio de Janeiro, São Paulo and other smaller Brazilian cities. A very detailed history of this holding, created in 1912 can be found in D. Mc Dowall, *The Light: Brazilian Traction Light and Power Company Limited 1899-1945*, Toronto, University of Toronto Press, 1988. For a broad vision of this and similar holdings see also C. Armstrong-H.V. NELLES, *Southern exposure: Canadian promoters in Latin America and the Caribbean 1896-1930*, Toronto, University of Toronto Press, 1988.
- 84 Arquivo Municipal de São Paulo, onwards AMSP-*Relatório do ano de 1915 apresentado a Câmara Municipal de São Paulo pelo Prefeito Washington Luis*, São Paulo, vol. 1, (1916, p. XIII). CEDHEI-*Annual Report: The São Paulo Tramway Light and Power Company Limited, for the year 1915*, (1915, pp. 7-10).

Meanwhile, the service supply deteriorated, as, the number of tramway cars remained almost identical, and circulated above passenger capacity. In addition, several new urban areas lacked public transportation services, given the companies' strategy to restrict network expansion only to sections financed by other private interests⁸⁵. Although there was no direct conflict, the managers criticised governments, complaining that it might have been the only place in the world that fares did not increase according to related working costs⁸⁶. The tramway situation further deteriorated with a drastic reduction of the tramway's operation caused by electricity shortage and restrictions on companies working expenses. The lack of urban transport decreased with the appearance of diesel buses, denounced by the tramway companies as detrimental to the monopoly on urban transport⁸⁷.

In the twenties, populism started to dominate urban politics⁸⁸, and, to obtain popular approval, governments denied the Brazilian Traction's monopoly on transportation. At this point the holding decided to change strategy, first by setting bus lines⁸⁹, and then by presenting a plan proposing a whole modification of urban public transport sector in both cities. The *Integrated Transportation Plan* proposed the division of the urban area in three sectors, to be supplied by different means of transport, all network linked. Considering the congestion of Rio de Janeiro and São Paulo, underground rapid tramways were indicated to enable better circulation downtown. The second sector would be supplied with tramways on the street level, and the third sector constituted by suburban zones, not yet supplied by tramways, would be furnished by buses. The holding wanted very high compensations in exchange for this modernisation. Firstly, a fare increase, secondly, the reintroduction of the zoning system, thirdly, the monopoly on all

85 CEDHEI-*Annual Report: The São Paulo Tramway Light and Power Company Limited, for the year 1920*, (p. 1, 20, and for 1922, pp. 1-2, 12); and *Annual Report of the Brazilian Traction Light and Power Company for the year 1919*, (p. 16), 1921, (p. 18).

86 CEDHEI-*Annual Report of the Brazilian Traction Light and Power Company for the year 1923*, (1923, pp. 12, 16) and *Anexo 1: Integra do Memorial apresentado pela Light a Prefeitura Municipal em Abril de 1924*, in "História & Energia", 3, 1986, pp. 66-70.

87 In 1924 and 1925 there was a great draught in São Paulo that affected seriously the electricity production. CEDHEI- *Annual Report: The São Paulo Tramway Light and Power Company Limited, for the year 1925*, (p. 10).

88 Regarding the question of populism, there is a very interesting research by M. Conniff, *Urban Politics in Brazil. The Rise of Populism, 1925-1945*, Pittsburgh, University of Pittsburgh Press, 1981.

89 The bus fare was 400 réis, and in some periods of great restriction of transport, taxis transformed their automobiles in jitneys: Patrimônio Histórico da Light Rio de Janeiro, *Twentieth-Third Annual Report of the Rio de Janeiro Tramway, Light and Power Company Limited, 1927*, pp. 24-26.

means of urban transport, and finally, all the infrastructure for underground transport had to be financed by municipalities⁹⁰.

The rise of populism as urban ideology influenced Rio de Janeiro and São Paulo governments leading to a lack of definition in the urban transportation sector, which engendered a decline on the tramway transport. Meanwhile, companies avoided investments in the sector, watchful for any government resolution about the Integrated Transportation Plan.

Foreign experts were invited by the municipalities to analyse propositions, and, although their reports acquiesce the plan, public officials side-step even suggestions on the basic proposal⁹¹. The tariffs connected with other services supplied by the holding Brazilian Traction Light and Power Company was partially based on the gold standard and did not cause any direct conflict with different level of governments. Nevertheless, they fail to involve executive officers responsible for the tramway service, that preferred to gain popular prestige on neglecting a fare increase to an influent foreign company⁹². The Revolution of 1930 adopted the policy of building large avenues that privileged collective and private transport by automobiles, and completely neglected the Integrated Transportation Plan.

The issue posed in the beginning, if public officials were captured by private interests when elaborating public utility regulation cannot be generalised, as it has changed along the period. During the establishment of the transport service, private interests of suppliers influenced regulation policy-making. Even without any kind of clashes between the public and the private, a long delay to elaborate regulation affected the tramway companies during merger period. Still, governments often forgave the payment of fees, to help companies to face financial problems. A monopoly of the transport services and related public utility supply, seemed to assure an unlimited power

90 The *Integrated Transportation Plan* was based on the analysis of the Canadian transport consult Norman Wilson: *CEDHEI-Annual Report of the Brazilian Traction Light and Power Company for the year 1927*, (p. 11); and *Anexo 3: Memorial enviado pela Light a prefeitura municipal em 1927, propondo o plano integrado de transportes*, in "História & Energia: O Metro da Light. São Paulo: Patrimônio Histórico da Eletropaulo", n. 3, 1986, pp. 73-90.

91 *AMSP-Relatório de 1925 apresentado a Câmara Municipal de São Paulo pelo prefeito Dr. J. Pires do Rio*, São Paulo, pp. 47 a 49.

92 The tramway fare increased only in 1947, when the service was incorporated by the municipalities: D. Mendes, *Bondes da Light: um adeus sem nostalgia. Memória*, São Paulo, Departamento de Patrimônio Histórico da Eletropaulo, 8:46-50, 1990.

transaction to the companies, although the populist willing of governments, refuse to confer a fare increase and the creation of an integrated transportation.

Nevertheless, this situation cannot be reduced to a merely hostility of populist governors against the companies controlled by the Brazilian Traction Light and Power Company. The governors' populist ideology could have damaged the holding's interests on the transport sector, but, at the same time these authorities granted the holding other advantages on the services of electricity, illumination, gas and telephone.



EUI WORKING PAPERS

EUI Working Papers are published and distributed by the
European University Institute, Florence

Copies can be obtained free of charge
– depending on the availability of stocks – from:

The Publications Officer
European University Institute
Badia Fiesolana
I-50016 San Domenico di Fiesole (FI)
Italy

Please use order form overleaf

Publications of the European University Institute

To The Publications Officer
European University Institute
Badia Fiesolana
I-50016 San Domenico di Fiesole (FI) – Italy
Telefax No: +39/55/573728
E-mail: publish@datacomm.iue.it

From Name

Address

.....

.....

.....

.....

- Please send me a complete list of EUI Working Papers
- Please send me a complete list of EUI book publications
- Please send me the EUI brochure Academic Year 1996/97

Please send me the following EUI Working Paper(s):

No, Author

Title:

No, Author

Title:

No, Author

Title:

No, Author

Title:

Date

Signature

Working Papers in History

HEC No. 90/1

Elisabeth ELGAN/Jan
GRÖNDAHL
Single Mothers in Early
Twentieth Century Sweden: Two
Studies

HEC No. 90/2

Jean-Pierre CAVAILLÉ
Un théâtre de la science et de la
mort à l'époque baroque:
l'amphithéâtre d'anatomie de
Leiden

HEC No. 90/3

Jean-François DUBOST
Significations de la lettre de
naturalité dans la France des XVIIe
et XVIIIe siècles

HEC No. 90/4

Alan BOOTH/Joseph MELLING
Trade Unions Strategies and
Productivity: A Suggested
Framework *

HEC No. 90/5

Bo STRÅTH
Union Strategies in Historical
Perspective: Sweden and
Germany *

HEC No. 90/6

Patrizia GUARNIERI
The Psyche in "Trance":
Inquiries into Hypnotism

* * *

HEC No. 91/7

Bonnie G. SMITH
On Writing Women's Work *

HEC No. 91/8

Marie Dominique COUZINET
La logique divine dans les
Six livres de la République de Jean
Bodin. Hypothèse de lecture *

HEC No. 91/9

Nuno Severiano TEIXEIRA
From Neutrality to Alignment:
Portugal in the Foundation of the
Atlantic Pact *

HEC No. 91/10

Lorenza SEBESTA
The Middle East and European
Security in the Fifties: a Historical
Assessment

HEC No. 91/11

Stuart WOOLF
Europe and the Nation-State *

HEC No. 91/12

António COSTA PINTO
The Salazar "New State" and
European Fascism *

* * *

HEC No. 92/13

Dominique POULOT
Le public, l'Etat et l'artiste. Essai
sur la politique du musée en
France des Lumières à la
Révolution

HEC No. 92/14

G. Andrea CAMPANA
The Korean War as a Case-Study
and some of its Implications for
Western Europe - A Reappraisal

HEC No. 93/1

René LEBOUTTE

Les bassins industriels en Europe.

Production et mutation d'un

espace 1750 - 1992 *

HEC No. 93/2

Agnès VAN DER PLAETSEN

PCI, Art et Culture en 68:

"Peindre avec le peuple"

* * *

HEC No. 95/1

Albert CARRERAS/Andrea

GIUNTINI/Michèle MERGER

(eds)

European Networks/Réseaux euro-

péens - A Companion Volume/

Volume complémentaire

HEC No. 95/2

Albert CARRERAS/Andrea

GIUNTINI/Andreas KUNZ (eds)

XIX and XX Centuries Transport

History. Current Trends and New

Problems

*out of print



© The Author(s). European University Institute.

Digitised version produced by the EUI Library in 2020. Available Open Access on Cadmus, European University Institute Research Repository.