

Guest editorial

Reexploring the interface between economic and transport geography

Mobility and economy

The relationship between the movement of goods and people, and economic and social development appears to be stronger than ever. Indeed, the assumption of a 'postmodern' or 'postindustrial' economy and society has intensified the focus on different forms of mobility (Creswell, 2001). A general hypothesis in this respect is that the significance of flows of goods, people, and information is rising, based on changes in scale (Dicken, 2003) and driven by the latest innovations in information and communication technologies (Janelle, 2004). As new scales are constructed and as new technologies become more widely adopted, both virtual and physical transactions contribute to what is often described as a shrinking globe, indicating significant changes in spatial and temporal relations. In turn, these newly emerging systems of flows and nodes and their network aggregates are shaping our understanding of how social relations and space are intertwined (see Crang, 2002). Not surprisingly, much recent discourse in the social sciences, human geography, and urban theory focuses on metaphors such as the 'network society' (Castells, 1996).

Yet the notion of the network is not really new at all; analyses of flows and mobility occupy a long-standing prominence in geography (Leinbach, 1976). Current developments in freight and logistics networks mirror those observed by economic geographers in relational production networks (Coe et al, 2004), even if the core transport science does not make explicit reference to these developments. Likewise, economies have in fact never been restricted to isolated locales [or 'states' (compare von Thünen, 1826)]; rather, local development has for long been recognized as something that is related to development elsewhere (Lipietz, 1993). In this respect, a major determinant of local economic development across space has been the geography of transport. Thus for example, among the traditional approaches to spatial theory, such as Weber's (1909) location choices of industry, Hoover's (1948) treatise on transport costs, Ullman's (1954) concept of trade flows, or Isard's (1956) attempt to create a general theory, spatial differentiation was always more or less directly linked to transport conditions and costs, and the opportunities or frictions to overcome the limitations given by them.

However, the traditional transport cost-based determination perpetuated a certain construction of the world on the basis of 'physical' and technological features, such as the size, density, and distance of flows. Probably the best example of this simplified view of the world is given by the gravity model (see Black, 2003, 162f). It attempted to 'explain' and predict the degree of spatial interaction (and thus spatial distribution) according to size and distance, size being regarded as directly, and distance as inversely, correlated with interaction. Moreover, spatial features such as the development of market areas, regional convergence, or corporate location behaviour were interpreted as being dependent mainly on transport costs, somehow mediated through particular conditions of accessibility and infrastructure provision.

Improvements in transport technologies, the massive enlargement of infrastructure and falling transport costs, not least thanks to cheap oil, changed the role of transport in the second half of the 20th century. Paradoxically, these improvements were very effective in putting transport out of consideration in economic geography.

The rising spatial freedom provided by the automobile, the truck, the jet plane, and the containership and their associated infrastructures encouraged scholars to take transport and mobility for granted. The more recent revolution in information and communication technologies perpetuated this oversight. For some, geographical 'fixity' became regarded as being more or less obsolete, because virtual interaction would replace concrete, personal interaction in physical space. In fact, these observations turned out to be premature and inaccurate; the 'physical' notion of space is by no means vanishing. Yet new forms of interaction are emerging, constantly reconfiguring and reconnecting social and spatial formations. As a consequence, the scientific community is devoting an overwhelming amount of attention to ideas and concepts such as networks, flows, and mobility.

Economy in transport, transport in economy

In the light of such changes, it is surprising that transport geography has been largely absent from a major part of the debate on networks. Instead, ideas such as the 'new mobility paradigm', originally developed in sociology (Urry, 2000; 2004), are gaining increasing momentum. Within geography, mobility studies have come mostly from the human or cultural strands of the discipline. Why did transport geography fail to keep up with the intellectual challenge provoked by such new thinking?

A cross-disciplinary panel between economic and transport geographers at the Centennial Conference of the Association of American Geographers in Philadelphia, Pennsylvania in 2004 was organized in order to discuss this question, and to seek common understandings of research issues and theoretical directions. The discussants included Donald Janelle (University of California, Santa Barbara), Brian Slack (Concordia University), Eric Sheppard (University of Minnesota), William Black (Indiana University), Theo Notteboom (University of Antwerp), and William Beyers (University of Washington). One observation of the panel was a deep-seated difference between the subdisciplines. Transport geography, it was noted by some on the panel, can be characterized by a strong empirical tradition, a mostly positivist approach, and a certain lack of theoretical orientation (see also Rimmer, 1985). In contrast, much economic geography is more theoretical, abstract, and, in keeping with the wider trends in other subdisciplines of human geography, some economic geographers have already opted up for a postpositivistic, 'interpretative' orientation of the field. This is by no means the case for transport geography.

In part, the subdisciplines have grown apart because many transportation geographers successfully attached themselves to the burgeoning cross-disciplinary field of transportation studies that, especially in North America, enjoyed significant policy salience and attracted considerable research funding. And, as already noted, the separation also had an empirical base, in that reduced transportation costs and new transportation technologies allowed a reconfiguration of the traditional nexus between transportation and economic development. The breakdown in this nexus was most visible in the decline of the traditional port-industrial city (see Hall, 2004), and in the relocation of manufacturing activity away from core locations. The reorganization of logistics networks and the associated relocation of warehousing and distribution out of core city districts into more remote areas also has not received much attention in transport geography and regional studies until recently (see Glasmeier and Kibler, 1996; Hesse, 2002).

At the same time, economic geographers must also share some of the responsibility for the lack of engagement between economic and transportation geography. Contrast the attention paid to transportation in Vernon's (1960) classic study of regional development, *Metropolis 1985*, with Dicken's (2003) belated inclusion of the distribution

industries in only the 4th edition of his contemporary economic geography classic, *Global Shift*. Economic geographers recording the effects of globalization on specific sectors, regions, and communities increasingly came to accept mobility as given. It is not only that the costs of transportation had fallen, it was as if the containers, air freight, and other transportation systems were always there, or at least were developed independently. Likewise, although immobility of at least some production factors is a central assumption in the models pioneered by the new geographical economists, transport costs themselves are brought into these models in a highly abstract, and indeed often inaccurate, fashion (see McCann, 2005).

If economic geographers have lately taken mobility for granted, transport geographers have tended to take the existing spatial distribution of economic activity as given. Hence, whereas economic and transport geographers generally accept the intuitive notion that economic and transport geographies (or agglomerations, nodes, and networks) are mutually constituted, each subdiscipline has sought to explain only one part of the whole. There is of course nothing wrong with this heightened subdisciplinary specialization, provided we are willing to acknowledge and examine what questions it leads us to ask, what explanatory factors to take as given, and what it leads us to ignore. And, provided that we are willing to actively seek out points of engagement.

Points of engagement

One way of thinking about the potential points of engagement between transport and economic geography can be taken from the wide-ranging and often vigorous debate between geographical economists (see Fujita et al, 1999; Krugman, 1991) and economic geographers (see Amin and Thrift, 2000; Martin, 1999; Martin and Sunley, 1996; Sheppard, 2001). Space does not permit a full review of the debate here; rather we will extract some lessons from Marchionni's (2004) recent clarification of the debate. Marchionni argues that, whereas geographical economists use abstraction and formal modelling to identify general principles that seek to explain the origin and persistence of economic agglomerations in general, economic geographers use realistic descriptions of particular temporal and spatial contexts to explain why specific agglomerations come about. In other words, each uses a different and incomplete set of explanatory factors to provide a partial explanation of real-world economic agglomerations.

In theory, there are three possible approaches to bridging such a divide; unification, supplementation (of one approach by the other), and separate coexistence (see also Maki, 1997). In the case of the divide between geographical economics and economic geography, Marchionni concludes that "it seems that the best strategy is for the two approaches to coexist side by side and be used to address different aspects of the phenomenon of agglomeration" (2004, page 1751). Although she recognizes the ultimate value of unification, this remains highly elusive. Similarly, the supplementary approach is appropriate only in those instances where explanatory factors are compatible, and here geographers [emphasizing "locally specific and contingent factors and deeper general processes" (page 1749)] and economists [emphasizing "general and abstract economic mechanisms operating at different spatial scales" (page 1749)] remain far apart.

In contrast, the papers included in this theme issue indicate that, although unification may remain elusive (and potentially undesirable), economic and transportation geography can indeed be pursued in ways that supplement the other. We argue that there has been a significant convergence around the key explanatory concepts employed in each of the subdisciplines; networks and nodes, the power of multinational firms and other transnational agents, and the salience of regulation and institutional arrangements and environments. By embracing these explanatory factors,

the papers included in this theme issue deliver richer insights for both transport and economic geography.

In “Rethinking the port”, Olivier and Slack employ analytical tools and language developed by economic geographers, specifically those concerning the multinational corporation, to theorize current trends in port development. They trace the development of theories seeking to explain changes in port geography, from Bird’s (1963) notion of ‘Anyport’ as an abstract morphology subject to largely mechanical processes of change, through the notion of ports as derivative spaces in wider shipping networks, to the notion of ports as institutional places subject to powerful actors that are themselves embedded in specific social, political, and economic systems. The prime actor, they argue, in this new geography is the (predominantly Asian) terminal-operating transnational corporation. At the same time, this new actor is implicated in a rescaling process that diverts attention from the port to the terminal, and that diverts power from the (public) port authority to a small number of private corporations.

Fowler also picks up on the theme of power, and its uneven distribution across networks, in his paper which explores what economic geographers can learn by employing methods and concepts developed in the transportation field. Although the network metaphor has enjoyed much prominence among economic geographers of late, critics have noted that the concept of the network remains elusive and imprecise. Indeed, a form of ‘network fundamentalism’ which reads off the fortunes of people and places persists. In contrast, Fowler finds significant year-on-year instability in the distribution of container movements through US West Coast ports. He argues that only an analysis of the exercise of power and competitive strategy by the actors which populate these networks can explain the very dynamic nature of the system. Note that, in recognizing the importance of network actors, principally container-steamship lines, in creating such a dynamic and unstable system, Fowler adds further evidence to the notion that transportation nodes and regional economic development outcomes have become disconnected.

In his paper Rodrigue makes a more general argument about the need to examine more closely the new actors in transportation networks. He takes on one of the tenets of the transportation field that is arguably a cornerstone of the separation between transport and economic geography, namely the notion that transportation is an activity of no inherent value, derived only from the desire to interact across space. This assumption, while analytically useful, ignores the range of new actors, such as third-party and fourth-party logistics providers, functionally integrated megacarriers, and distribution centers, which are capable of, and indeed are, reshaping freight flows by introducing their own strategic concerns into freight planning. Integration across the distribution system, and between the distribution and production systems, thus raises doubts about the validity of the presumption that freight movements are simply derived from existing economic activity. Instead, Rodrigue argues that the supply chain is the appropriate unit of analysis in a new approach that he calls ‘integrated transport demand’.

Clearly information technologies have played a crucial enabling role in the emergence of newly integrated logistics and supply chains. Schwarz’s case study of the transatlantic air cargo industry depicts a complex, fragmented, and highly regulated business environment giving way to one that is both more integrated and more consolidated. Schwarz presents findings from interviews with executives along the entire air cargo chain, highlighting again the power differentials that pervade the system. Although the initial application of information technology (IT) raised the prospect of disintermediation along logistics chains in a virtual marketplace, consolidation in an

increasingly IT-savvy air transport industry has instead resulted in reintermediation. At the same time, consolidation and the interdependencies between flows in physical and virtual space are reinforcing the trend towards air freight consolidation in hub airports.

The final paper in the collection also focuses on the geographies that result when transportation and economic systems intersect in place. Wang and Olivier argue that port-free trade economic zones, specifically in China as illustrated by the Tianjin Economic Development Area, can be understood as intersections between 'spaces of production' and 'spaces of circulation'. These port-export-processing zones are spaces of intense economic activity and phenomenal export-oriented manufacturing growth, but they are separated from their surrounding hinterlands. The notion that economic activity should take place at nodes within transportation networks (at the break of bulk point, if you will) is not new, nor is the uncomfortable relationship between export-processing zones and their surroundings they highlight. Instead, Wang and Olivier's important contribution is to identify the active role played by transport firms in creating these spaces.

To the future

A major empirical topic raised by all the papers in this theme issue concerns the role of logistics in globally organized production networks. Will logistics and freight distribution continue to be the servant of the production sector, whose performance is more or less derived by the particular demand of manufacturing for timely supply and delivery of resources and components, or is it becoming integrated, or 'structural', as Rodrigue puts it in this issue? How might logistics concerns change global *production networks* into globally integrated *production and distribution networks*, and which actors will play the major role in this context? What roles will institutional change, including deregulation and the rise of a new kinds of transportation service companies, play in this process?

First, contemporary production systems are increasingly characterized by vanishing boundaries between supply, manufacturing, and distribution activity. Logistics firms are taking over parts of both manufacturing and retail activity, and the different components of value chains are becoming widely distributed among actors and places. Managerial and operational power may become concentrated in the hands of a few large manufacturers or a few large retailers or a few transportation firms which offer integrated logistics services. The variety of potential trajectories appears much more complicated than the simplified dichotomy of buyer-driven and supplier-driven commodity chains may suggest.

Second, these potential trajectories of corporate power also have important, and often disturbing, implications for place-based communities and workers. Herod's (2001) work on the geographical implications of containerization for the organization of longshore labor on the US East Coast suggests that new transportation technologies and organizational forms will allow employers to experiment with new ways of reducing labor costs, while providing workers with new opportunities of organizing along supply chains. Likewise place-based communities may find that the new logistics firms are footloose and fixed in ways that differ from multinational manufacturing corporations.

Third, geographical questions such as the location of a certain activity remain dependent upon accessibility in a very physical sense, and many of the papers presented here support the view that organizational and institutional 'friction' is adding to pure transport costs. The more transport becomes a critical and a scarce resource, less well functioning and ubiquitous than before (as is already the case in many major metropolitan regions and along certain transnational transport corridors), the greater

will be the emphasis on distribution efficiency, transport time and reliability, and transport costs.

It is likely that changes in one of the core elements that has contributed to the dissociation between economic and transport geography (namely, cheap oil and thus cheap energy) will favor a closer interaction of the subdisciplines in empirical and conceptual representations. Indeed, it is not that transportation receded in significance as a support to economic activity in the latter part of the 20th Century; rather, comparatively low energy costs often conveyed the impression that transport costs were a factor of limited importance in explaining global supply chains. Fallacies such as the 'death of distance' derived from a transport system that was not significantly constrained by energy costs. The fact that globally (and nationally) the physical amount of freight in circulation increased is sufficient evidence that lower costs promoted the use of transportation and the reliance of economic systems (through their supply chains) on transport activities. However, this situation may change substantially in coming years.

Whereas in the past oil price variations were mainly the outcome of geopolitical events, implying that surges in price were followed by a significant drop afterwards (for example, first and second oil shocks, first Gulf War), surging demand and peak oil output are now forces actively shaping energy prices (Deffeyes, 2005). Oil as a source of energy is still abundant, but its price has increased because of geological, distributional, and refining constraints. This, in conjunction with localized congestion, globally oriented systems of production, distribution, and consumption, and a competitive, deregulated market environment, will be a strong 'reality check' for cheap transportation and its spatial structure. The adjustments imposed on freight distribution are likely to place additional pressures to improve multimodal freight transport systems at all scales. Thus, we may experience in the following decade a new phase of change in transport and economic geographies simply because the costs of maintaining the existing distribution structure will increase and the existing comparative advantages of many activities will be compromised.

Has the current distribution system sowed the seeds of its own end, or is it flexible and adaptable enough to cope with an energy transition? Conventional transport theory tells us that, in such a situation, a modal shift towards more energy-efficient modes such as rail and maritime shipping could be expected, challenging the prominence of trucking after decades of unmitigated growth. However, this may even trigger a reorganization of production and distribution more in accordance with traditional conceptualizations such as central place theory, in which transport costs were more heavily weighted in the assessment of a spatial structure. After decades of dislocation, economic and transport geographies may be forced to go back to their source.

Finally, policy and planning challenges persist and indeed are growing; current trends reveal the unsustainable character of the transportation system, particularly in the cases of road and air traffic (OECD, 2004). Yet success stories that may pave the way for political intervention are lacking. The window of opportunity to manage freight and logistics through public policy perspective appears to be quite narrow (see Banister, 2002, 126f). This is, amongst other factors, because logistics and freight distribution are subject to market power and core corporate interests. With direct incentives for firms to minimize transport costs often missing, most attempts at public intervention have failed. Instead, the public role in transportation policy and planning has largely been confined to infrastructure provision. We now observe the emerging power of multinational enterprises that are able to establish their own, dedicated infrastructure networks (see Graham and Marvin, 2001). Thus our traditional understanding of infrastructure policy, focusing on publicly provided facilities for general use

and wealth, is being challenged by the new kind of metaprivatisation of a former public good. How will this paradigm shift in infrastructure provision shape transport and economic geographies, and how may transport and economic geographers respond best to this challenge?

Peter Hall, University of Waterloo

Markus Hesse, Free University Berlin

Jean-Paul Rodrigue, Hofstra University

Acknowledgements. The papers included in this theme issue were first presented and discussed at the 2004 Centennial American Association of Geographers conference in Philadelphia as part of several special sessions sponsored jointly by the Transport and Economic Geography Specialty Groups. We would like to thank all the participants in these sessions for contributing to a vibrant, ongoing discussion. We are especially grateful to Jamie Peck and Ros Whitehead for their guidance in preparing this theme issue, to the cohort of anonymous reviewers for their constructive and insightful comments, as well as the authors themselves.

References

- Amin A, Thrift N, 2000, "What kind of economic theory for what kind of economic geography?" *Antipode* **32** 4–9
- Banister D, 2002 *Transport Planning* 2nd edition (Spon, London)
- Bird J H, 1963 *The Major Seaports of the United Kingdom* (Hutchinson, London)
- Black W, 2003 *Transportation. A Geographical Analysis* (Guilford, New York)
- Castells M, 1996 *The Rise of the Network Society* (Blackwell, Oxford)
- Coe N M, Hess M, Yeung H W, Dicken P, Henderson J, 2004. "Globalizing regional development: a global production networks perspective" *Transactions of the Institute of British Geographers, New Series* **29** 468–484
- Cragg M, 2002, "Between places: producing hubs, flows, and networks" *Environment and Planning A* **34** 569–574
- Creswell T, 2001, "The production of mobilities" *New Formations* **43** (Spring) 11–25
- Deffeyes K S, 2005 *Beyond Oil: The View From Hubbert's Peak* (Farrar, Straus and Giroux, New York)
- Dicken P, 2003 *Global Shift: Reshaping the Global Economic Map in the 21st Century* 4th edition (Guilford, New York)
- Fujita M, Krugman P, Venables A J, 1999 *The Spatial Economy: Cites, Regions and International Trade* (MIT Press, Cambridge, MA)
- Glasmeyer A, Kibler J, 1996, "Power shift: the rising control of distributors and retailers in the supply chain for manufactured goods" *Urban Geography* **17** 740–757
- Graham S, Marvin S, 2001 *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition* (Routledge, London)
- Hall P V, 2004, "'We'd have to sink the ships': impact studies and the 2002 West Coast Port lockout" *Economic Development Quarterly* **18** 354–367
- Herod A, 2001 *Labor Geographies* (Guilford, New York)
- Hesse M, 2002, "Changes in goods distribution and the city: physical distribution as an indicator of urban and regional development" *Monitoring Cities: International Perspectives* Eds W Davies, I Townshend, Urban Commission, International Geographical Commission, Calgary and Berlin, pp 357–372
- Hoover E, 1948 *Location of Economic Activity* (McGraw-Hill, New York)
- Isard W, 1956 *Location and Space-economy: A General Theory Relating to Industrial Location, Market Areas, Land Use, Trade, and Urban Structure* (MIT Press, Cambridge, MA)
- Janelle D, 2004, "Impact of information technologies", in *The Geography of Urban Transportation* Eds S Hanson, G Giuliano, 3rd edition (Guilford, New York) pp 86–114
- Krugman P, 1991 *Geography and Trade* (MIT Press, Cambridge, MA)
- Leinbach T, 1976, "Networks and flows" *Progress in Geography* **8** 179–207
- Lipietz A, 1993, "The local and the global: regional individuality or inter-regionalism?" *Transactions of the Institute of British Geographers, New Series* **18** 8–18
- McCann P, 2005, "Transport costs and the new economic geography" *Journal of Economic Geography* **5** 305–318
- Maki U, 1997, "The one world and the many theories", in *Pluralism in Economics* Eds A Salanti, E Screpanti (Edward Elgar, Cheltenham, Glos) pp 37–47

-
- Marchionni C, 2004, "Geographical economics versus economic geography: towards a clarification of the dispute" *Environment and Planning A* **36** 1737–1753
- Martin R, 1999, "The new 'geographical turn' in economics: some critical reflections" *Cambridge Journal of Economics* **23** 65–91
- Martin R, Sunley P, 1996, "Paul Krugman's geographical economics and its implications for regional development theory: a critical assessment" *Economic Geography* **3** 259–292
- OECD, 2004 *Communicating Environmentally Sustainable Transport: The Role of Soft Measures* (OECD, Paris)
- Rimmer P, 1985, "Transport geography" *Progress in Human Geography* **10** 271–277
- Sheppard E, 2001, "How 'economists' think: about geography, for example" *Journal of Economic Geography* **1** 131–136
- Ullman E L, 1954, "Geography as spatial interaction", reprinted in 1980 in *Geography as Spatial Interaction* Eds E L Ullman, R R Boyce (University of Washington Press, Seattle, WA) pp 13–27
- Urry J, 2000 *Sociology Beyond Societies: Mobilities of the Twenty-first Century* (Routledge, London)
- Urry J, 2004, "The new mobilities paradigm", paper presented at the 1st Cosmobilities Workshop in Munich, Fall; copy available from the author, Department of Sociology, Lancaster University, Lancaster
- Vernon R, 1960 *Metropolis 1985* (Doubleday, New York)
- von Thünen J H, 1826 *Derisolierte Staat*; translated in 1966 by C M Wartenberg as *The Isolated State* (Pergamon Press, Oxford)
- Weber A, 1909 *Über den Standort der Industrie*; translated in 1929 as *Alfred Weber's Theory of the Location of Industries* (University of Chicago Press, Chicago, IL)