

Editorial: Mobilities, Immobilities and Moorings

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KEY WORDS: Mobilities, immobilities, travel communications, tourism

Introduction

Mobility has become an evocative keyword for the twenty-first century and a powerful discourse that creates its own effects and contexts. The concept of mobilities encompasses both the large-scale movements of people, objects, capital and information across the world, as well as the more local processes of daily transportation, movement through public space and the travel of material things within everyday life. Issues of movement, of too little movement or too much or of the wrong sort or at the wrong time, are central to many lives, organisations and governments. Dreams of ‘hyper-mobility’ and ‘instantaneous communication’ drive contemporary business strategy, advertising and government policy while also eliciting strong political critiques from those who feel marginalised or harmed by these new developments. Fears of illicit mobilities and their attendant security risks increasingly determine logics of governance and liability protection within both the public and private sectors. From SARS and avian influenza to train crashes, from airport expansion controversies to controlling global warming, from urban congestion charging to networked global terrorism, from emergency management in the onslaught of tsunamis and hurricanes to oil wars in the Middle East, issues of ‘mobility’ are centre-stage. Many public, private and not-for-profit organizations are seeking to understand, monitor, manage and transform aspects of these multiple mobilities, and of the new ‘immobilities’, social exclusions and security threats that may be associated with them.

And partly as an effect a ‘mobility turn’ is spreading into and transforming the social sciences, not only placing new issues on the table, but also transcending

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disciplinary boundaries and putting into question the fundamental ‘territorial’ and ‘sedentary’ precepts of twentieth-century social science. It seems that a new paradigm is being formed within the social sciences, the ‘new mobilities’ paradigm (Sheller & Urry, 2006b).¹ The journal *Mobilities* has been launched to address this emerging attention to many different kinds of mobility, both by those engaged in practicing and regulating diverse mobilities and by those involved in researching and understanding present-day and historical mobilities. In this editorial introduction we outline some emerging empirical trends in diverse interacting systems of mobility and the related governance and policy concerns around the world. We then use the examples of airports and urban disasters to explore some of the topics and issues of relevance within the field. And we suggest a range of new theoretical approaches being developed across the social sciences to address these complex and emergent mobility issues.

Mobility Systems and Mobility Governance

The global order is increasingly criss-crossed by tourists, workers, terrorists, students, migrants, asylum-seekers, scientists/ scholars, family members, business people, soldiers, guest workers and so on. Such multiple and intersecting mobilities seem to produce a more ‘networked’ patterning of economic and social life, even for those who have not moved. And materials too are on the move, often carried by moving bodies whether openly, clandestinely or inadvertently. The multinational sourcing of different components of manufactured products involves just-in-time delivery from around the world, while the ‘cosmopolitanization’ of taste puts all kinds of consumer commodities and ‘travelling objects’ into motion (Lury, 1997).

These changes are having many effects. Mobilities are centrally involved in reorganizing institutions, generating climate change, moving risks and illnesses across the globe, altering travel, tourism and migration patterns, producing a more distant family life, transforming the social and educational life of young people, connecting distant people through ‘weak ties’ and so on. The human body and the home are transformed, as proximity and connectivity are imagined in new ways and often enhanced by communication devices and likely to be ‘on the move’. Changes also transform the nature, scale and temporalities of families, ‘local’ communities, public and private spaces, and the commitments people may feel to the ‘nation’.

Crucially, the nation itself is being transformed by these mobilities, as is the city. New economic and political geographies of ‘state rescaling’ and urban restructuring emphasize the historicity of social space, the polymorphism of geographies, the restructuring of scale and the remaking of state space (see Brenner, 2004; Brenner & Theodore, 2002). Drawing on Harvey’s historical geography of capitalism and Lefebvre’s theory of the production of space, Brenner for example argues that deterritorialization and reterritorialization, or what we also call mobilities and moorings, occur dialectically, and that the ‘contemporary round of global restructuring has entailed neither the absolute territorialization of societies, economies, or cultures onto a global scale, nor their complete deterritorialization into a supraterritorial, distanceless, placeless, or borderless space of flows’ (Brenner, 2004, p.64). Instead, ‘the image of political-economic space as a complex, tangled mosaic of superimposed and interpenetrating nodes, levels, scales, and morphologies

has become more appropriate than the traditional Cartesian model of homogenous, self-enclosed and contiguous blocks of territory that has long been used to describe the modern interstate system' (Brenner, 2004, p.66). This shift away from the 'traditional, Westphalian model of statehood' based on national-territorial containers towards more 'complex, polymorphic, and multiscalar regulatory geographies' (Brenner, 2004, p.67) is, we would add, fundamentally related to the emergence of complex mobility systems and their restructuring of both space and time.

Mobilities cannot be described without attention to the necessary spatial, infrastructural and institutional moorings that configure and enable mobilities – creating what Harvey (1989) called the 'spatial fix'. Thus the forms of detachment or 'deterritorialization' associated with 'liquid modernity' (Bauman, 2000) are always accompanied by rhizomic attachments and reterritorializations of various kinds (Shurmer-Smith & Hannam, 1994; Sheller, 2004a). There are interdependent systems of 'immobile' material worlds and especially some exceptionally immobile platforms, transmitters, roads, garages, stations, aeriels, airports, docks, factories through which mobilizations of locality are performed and re-arrangements of place and scale materialized. The *complex* character of such systems stems from the multiple fixities or moorings often on a substantial physical scale that enable the fluidities of liquid modernity, and especially of capital. Thus 'mobile machines', mobile phones, cars, aircraft, trains and computer connections, all presume overlapping and varied time-space immobilities (Graham & Marvin, 2001; Urry, 2003a). There is no linear increase in fluidity without extensive systems of immobility, yet there is a growing capacity for more flexible and dynamic scalar shifting, polymorphism of spatial forms and overlapping regulatory regimes. We can refer to these as affording different degrees of 'motility' or potential for mobility (Kaufmann, 2002), with motility now being a crucial dimension of unequal power relations.

Mobilities also are caught up in power geometries of everyday life (Massey, 1994). There are new places and technologies that enhance the mobility of some peoples and places *even as they also* heighten the immobility of others, especially as people try to cross borders (Timothy, 2001; Verstraete, 2004; Wood & Graham, 2006). 'Differential mobility empowerments reflect structures and hierarchies of power and position by race, gender, age and class, ranging from the local to the global' (Teschfahoney, 1998, p.501). Rights to travel, for example, are highly uneven and skewed even between a pair of countries (Timothy, 2001; Gogia, 2006). Many feminist theorists have argued that nomadic theory rests on a 'romantic reading of mobility', and that 'certain ways of seeing [arise] as a result of this privileging of cosmopolitan mobility' (Kaplan, 2006; see also Pritchard, 2000; Tsing, 2002). Ahmed, for example, critiques mobile forms of subjectivity and argues that the 'idealisation of movement, or transformation of movement into a fetish, depends upon the exclusion of others who are already positioned as *not free in the same way*' (Ahmed, 2004, p.152). Skeggs further argues that the mobility paradigm can be linked to a 'bourgeois masculine subjectivity' that describes itself as 'cosmopolitan'; she points out that '[m]obility and control over mobility both reflect and reinforce power. Mobility is a resource to which not everyone has an equal relationship' (Skeggs, 2004, p.49; see also Morley, 2002; Sheller & Urry, 2006b). It is not a question of privileging a 'mobile subjectivity', therefore, but rather of tracking the

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power and politics of discourses and practices of mobility in creating both movement and stasis (Cresswell, 1999; Maurer, 2002; Franklin *et al.*, 2000).

The analysis of spatiality and spatial restructuring is one area of social science that began to bring out the significance of mobilities (Soja, 1989; Harvey, 1989), yet in some ways has not fully taken this step. In mapping the time-space geographies of everyday life, for example, Hagerstrand (1982) and his followers have increasingly introduced spatial analysis into the mainstream of social science (Giddens, 1984; Thrift, 1996; see also Hall's 2005 volume for a re-working of Hagerstrand's work in terms of contemporary tourism mobilities). Nevertheless, in their search for spatial *ordering*, the social sciences have still failed to fully recognize how the spatialities of social life presuppose, and frequently involve conflict over, both the actual and the imagined movement of people from place to place, event to event. Travel has largely been for the social sciences a black box, a neutral set of technologies and processes predominantly permitting forms of economic, social and political life that are seen as explicable in terms of other, more causally powerful processes.

Recent developments in transportation and communications infrastructures, along with new social and cultural practices of mobility, and the political and economic challenges of governance and rescaling, have elicited a number of new research initiatives for understanding the connections between these diverse mobilities. Technological, social and cultural developments in public and private transportation, mobile communications, information storage and retrieval, surveillance systems and 'intelligent environments' are rapidly changing the nature of travel and of communications conducted at-a-distance. As mobile connectivity and disconnection begins to occur in new ways across a wide range of cyber-devices and integrated places, so we need better theorization and research, especially to examine the interdependencies between changes in physical movement and in electronic communications, and especially in their increasing convergence, including both mobile communications and new forms of 'virtual' and 'imaginative' mobility.

In addition to physical travel, both the Internet and mobile telephony are allowing new styles of communicating on the move (see papers in Callon *et al.*, 2004; Brown *et al.*, 2002; Sheller & Urry, 2006a and b), new forms of coordination of people, meetings and events (see Buscher, 2006; Jain, 2006), and a re-arrangement of the relations between domestic and public space (see Morley, 2002). There is increasing convergence between transport and communication, 'mobilizing' the requirements and characteristics of co-presence into a new kind of mobility nexus.

And as daily and weekly time-space patterns in the richer parts of the world are desynchronized from historical communities and place, so systems provide the means by which to schedule work and social life. Scheduling becomes ever more necessary to manage 'personalized networking' (Haythornthwaite & Wellman, 2002; Hampton & Wellman, 2001). 'Personalized networking' entails a person-to-person connectivity, most visible with machines that enable immediate, mobile connectivity. The greater the personalization of networks, the more important are systems to facilitate that personalization. Overall there is an increasingly 'do-it-yourself' scheduling society commonplace in at least large cities across the world (Southerton *et al.*, 2001).

Complex 'mobility systems' and their associated moorings are developing new characteristics. They are simply much more complicated, made up of very many

elements and based upon specialized and arcane forms of expertise. Mobilities have always involved expert systems but these are now highly specialized, many based upon entire university degree programmes and specialized consultancy companies. Moreover, such systems are much more interdependent so that individual journeys or pieces of communication depend upon multiple systems, all needing to function and interface successfully with each other. Indeed, since the 1970s onwards, systems are much more dependent upon computers and software. Software, we might say, writes mobility. Various sorting systems determine entry and exit by deploying detection systems and cyber-imagery of 'strangers' and 'familiar', 'preferred customers' and those dumped in the waiting queue, automated express lanes and bypassed slow lanes (see Graham, 2002; Graham & Marvin, 2001; Wood & Graham, 2006). A huge generation of specific software systems and communication systems have been developed that need to speak effectively to each other in order that particular mobilities take place, and others are blocked.

Even as the materiality of mobility systems becomes more complex, material changes simultaneously seem to be 'de-materializing' connections, as people, machines, images, information, power, money, ideas and dangers are 'on the move', making and remaking networks at an increasingly rapid speed across the world. Social networks are underpinned by technologies based upon time-frames transcending human consciousness. Computers make decisions in nanosecond time, producing instantaneous and simultaneous effects. Pervasive computing produces a switching and mobility between different self-reproducing systems, such as the Internet with its massive search engines, databases of information storage and retrieval, world money flows (Leyshon & Thrift, 1996), intelligent transport systems (Sheller, 2006), robotic vision machines under the oceans, and vision machines more generally (Thrift, 2001; Kaplan, 2006).²

In sum, the emerging mobilities paradigm challenges the ways in which much social science research has been relatively 'a-mobile' until recently. Accounting for mobilities in the fullest sense challenges social science to change both the objects of its inquiries and the methodologies for research. Our approach to mobilities problematizes both 'sedentary' approaches in the social science that treat place, stability and dwelling as a natural steady-state, and 'deterritorialized' approaches that posit a new 'grand narrative' of mobility, fluidity or liquidity as a pervasive condition of postmodernity or globalization (see Sheller & Urry, 2006b; Cresswell, 2002). It is part of a broader theoretical project aimed at going beyond the imagery of 'terrains' as spatially fixed geographical containers for social processes, and calling into question scalar logics such as local/global as descriptors of regional extent (see Brenner, 2004; Tsing, 2002 on tracking 'rhetorics of scale' and what counts as relevant scales). If we use metaphors that imply moving beyond both geographical fixity and also beyond disciplinary boundaries, we also recognize the politically contested nature of such mobilities (Braidotti, 1994; Shurmer-Smith & Hannam, 1994; Cresswell, 2002; Urry, 2000).

Airports, Cities and Mobility Disasters

To illustrate some elements of the emerging mobilities paradigm we turn briefly to two iconic examples of the significance of complex interlocking mobility and

mooring systems in the world today: airports and urban disasters. Both are illustrative of some of the complex problems created for the re-scaled governance, regulation and control of the dynamic interfaces of transportation, communication, provisioning, software sorting and scheduling systems.

Contemporary airports have historically developed from military airports and the drive for 'airpower', which afforded a huge military advantage to those who controlled the 'cosmic view' from the air (Kaplan, 2006). This socio-technical system has been turned into a form of mass mobility that requires an exceptionally extensive and immobile place, the airport-city with tens of thousands of workers orchestrating the four million air journeys taking place each day (see Pascoe, 2001). This airport space is a 'space of transition' that facilitates the shrinkage of the globe and the transcendence of time and space (Gottdiener, 2001, pp.10–11), especially by 'seamlessly' connecting major 'global' cities (Urry, 2000) – though mainly for the hypermobile elite. The *system* of airports links together places, forming networks that bring connected places closer together, while distancing those places that are not so connected. They are one of many 'transfer points' (Kesselring & Vögl, 2006), 'places of in-between-ness' involved in being mobile but immobilized in lounges, waiting rooms, cafés, amusement arcades, parks, hotels, stations, motels, harbours – an immobile network so that others can be on the move.

Contrary to Augé's (1995, p.110) 'cultural critique of placelessness' associated with analysis of non-places 'where people coexist or cohabit without living together', airports do in fact possess a specific contingent materiality and considerable social complexity. Airports are places of: 'the boring, everyday, routine, but essential operations, processes, systems, and technologies, that enable global mobility to occur' (Parker, 2002, p.16). Various non-human actants, combined with rule-following humans, enable, for example, air traffic control systems to effect high levels of safe take-offs and landings (see Harper & Hughes, 1993).

Airports are also a place of 'cybermobilities' (Adey & Bevan, 2006) in which software keeps the airport system functioning smoothly and transforms it into a kind of 'code/space' (Dodge & Kitchin, 2004). Wood and Graham (2006) further suggest that automated software for sorting travellers as they pass through automated surveillance systems, such as iris-recognition systems, is increasingly producing a 'kinetic elite' whose ease of mobility differentiates them from the low-speed, low-mobility majority. Software also enables the tight coupling of distinctive airport systems – from the baggage X-ray and passenger surveillance systems to air traffic control and mechanical systems, passenger ticketing and ground transportation, and human resource systems that manage flight crews, ground workers and security staff – such that breakdowns in one component of an airport system often have knock-on effects which can cause lengthy delays.

Increasingly air terminals are becoming like cities (Gottdiener, 2001; Pascoe, 2001) but also in what has been called the frisk society, cities are becoming like airports. The use of technologies such as detention centres, CCTV, Internet cafes, GPS systems, iris-recognition security, WiFi hotspots and intermodal traffic interchanges are first trialled within airports before moving out as mundane characteristics of cities, places of fear and highly contingent ordering within the new world disorder. And daily flows through airports contribute immensely to the production of contemporary urbanism, including diasporic cultural communities,

'ethnic' restaurants and neighbourhoods, distant families and cosmopolitan identities, and exclusive zones and corridors of connectivity for the fast-tracked kinetic elite. Indeed as other analysts of global networks argue, the increase in cross-border transactions and of 'capabilities for enormous geographical dispersal and mobility' go hand-in-hand with 'pronounced territorial concentrations of resources necessary for the management and servicing of that dispersal and mobility' (Sassen, 2002, p.2).

Airport systems are part of the process through which time and space are dramatically bent, as graphically seen in the events of 11 September 2001. When civilian aeroplanes are turned into weapons, time-space is violently rent and 'curved' into new complex configurations as the 'whole world' is brought dramatically closer (see Urry, 2002). Systems of interconnected material worlds produce *new* moments of unintended and dangerous co-presence. The 'gates' designed to prevent networks from colliding, and the narratives of security that underwrote the building of those gate-keeping processes are less sustainable as flows of terrorists slip under, over and through various borders, eliminating the invisibilities and screens that kept networks apart.

More generally, the mobilities of money laundering, the drug trade, sewage and waste, infections, urban crime, asylum seeking, arms trading, people smuggling, slave trading and urban terrorism, all make visible the already existing chaotic juxtaposition of different spaces and networks. Thus global diseases rapidly move and the 'world has rapidly become much more vulnerable to the eruption and, more critically, to the widespread and even global spread of both new and old infectious diseases.... The jet plane itself, and its cargo, can carry insects and infectious agents into new ecologic settings' (Mann, cited in Buchanan, 2002, p.172). Only a few long-range transport connections are necessary to generate pandemics, such as those threatened by SARs that spread across the very mobile Chinese diaspora in 2003, especially moving between south China, Hong Kong and Toronto (Sum, 2004; Little, 2006), or the feared global spread of avian influenza from birds to humans and then from human to human in a repeat of the 1918 flu epidemic that killed 50 million people worldwide.³

Urban disasters bring to the fore the astounding fragility of complex mobility systems. The attack on the World Trade Center towers and their fiery collapse horrifically seared into global consciousness not only massive loss of human life, but also a vision of simultaneous destruction of multiple mobility systems and a disruption of the global discourse of unfettered mobility as a way of life (see Little, 2006). A huge node in the global financial trading system was shut down. A major station in the metropolitan transportation system was obliterated. A significant hub in the telephonic and electronic communications systems fell silent, while the mobile phone network was overwhelmed. And the crucial channels of governmental emergency coordination of police and fireman faltered. Bridges and tunnels were closed to traffic, crowds had to flee Manhattan on foot unable to contact loved ones, and air traffic was placed on an emergency footing. The attacks were perceived as targeting not just the United States at a national scale, but also specifically New York City as a 'global city' of transnational mobility of capital, information and people.

The impact of Hurricane Katrina on the US Gulf Coast in September 2005 brought another major American metropolitan area to the point of chaos and total systems failure. The dysfunctional evacuation of New Orleans left the poor and the

infirm in harm's way, many without cars and without an adequate public transportation system to leave the city. Once the storm hit and flooded out bridges, roads and the power grid, government coordination and civil order collapsed along with the communications systems. After the storm, the inability of the Federal Emergency Management Agency, FEMA, to bring aid quickly into the region, along with the unavailability of the many National Guard troops deployed to Iraq, left the storm's victims largely cut off from the outside world and from would-be rescuers. The ensuing media mobilization of reporters, cameras and satellite-broadcast images revealed to the world thousands of people trapped in a submerged city and facing the collapse of all provisioning systems, power, food, water, baby formula, diapers and medical supplies. The crisis underlined the total dependence of the urban US on complex and tightly interlocking systems of mobility, transportation and communication to sustain contemporary urban life.

These complex systems have become especially vulnerable to what Perrow terms 'normal accidents' that are almost built in, almost certain to occur from time to time given the tightly locked-in nature of such systems (Perrow, 1999; Law, 2006). Indeed, catastrophes such as 9/11, SARS, multiple suicide bombings of transport networks, hurricanes and tsunamis not only strike at mobility systems but also engender their own unique mobilities as people seek to flee the onset of an impending disaster, as poignantly seen in the evacuation, communication and relief disasters following the hurricanes on the Gulf Coast.⁴ While these may be 'natural disasters' (although attributed in part to rising sea levels, warmer water, increased storm surges through global warming) it is their wider knock-on effects upon transportation, communications and tourism that hurt above and beyond the immediate storm damage, bad though that was. Both major hurricanes triggered spikes in oil and gas prices throughout the US, as the oil-drilling, refining and distribution infrastructures of the Gulf were closed down. National transportation infrastructures were also crippled by the closures of Mississippi river navigation, crucial to agricultural transport, and of the Gulf fisheries, where fishing fleets, oyster beds and shrimp processing plants were destroyed.⁵ New Orleans is also a significant tourism and conference destination, and the storm had a deep impact on travel to the region, which may last for some time, since the cultural foundations, musicians, restaurants, carnival crews, and so on as well as the party image of 'the Big Easy' will be difficult to rebuild (see Tzanelli in this issue, on the disruption of Western fantasies of tourism in Thailand; and Hannam, 2004b on responses to such crises). It was also an area that employed many non-citizens, including undocumented immigrants from Central America and Caribbean workers on temporary hotel and service industry visas, whose plight has been less visible in the context of a 'national' disaster.⁶

These disasters elicited a US-wide resurgence of debate over the oil-based economy and the war in Iraq, global warming and the culture of automobility, the failure to invest in public transport and poor land-use planning in both urban and coastal areas, and the 'shame' of continuing urban poverty and racial segregation within major American cities. All of these are issues of mobility *and* moorings: how to move and how to settle, what is up for grabs and what is locked in, who is able to move and who is trapped. In the aftermath of these hurricanes further mobility systems failures were compounded. FEMA efforts to re-house the displaced population in 'mobile homes' made little progress since not enough sites could be

found to park these homes (see Hagman, in this issue, on the significance of parking), and other water-weary evacuees refused cruise ship accommodation that was on offer. Hundreds of thousands of dollars were also spent by the federal government to purchase ice and have it trucked in, most of which was sent on epic weeks-long journeys around the country in refrigerated rigs that never reached their intended destinations due to an apparent inability to solve the logistics of distribution in places with no power. Here again, it is sometimes the inability to stop mobility once it is in progress that needs attention (see Hagman, Cohen, both in this issue). Further problems arose with the breakdown of waste-removal systems, as putrefying bodies, rotting food, moulding furniture, and the detritus of destroyed buildings, cars and homes piled up in the streets along with the 'toxic soup' of contaminated floodwaters (see Marvin & Medd, 2006).

Crucial to the political fallout from the governmental failures in response to this emergency situation, and to other risks more generally, has been a debate about the relation between municipal, state, regional and federal governments, each of which has been restructuring according to different spatial projects and spatial strategies, at different scales and in response to different challenges and pressures (see Brenner, 2004). In the struggle over urban governance and state rescaling, it seems that the coordination of local, regional and national mobility and communication systems has been neglected. Ongoing processes of interspatial competition, rescaling, and reterritorialization suggest that such crises in the coordination of mobility systems will proliferate in the future, making it more urgent than ever that social science develop a coherent programme for mobilities research in order to see how to develop 'resilience' of interlocking systems. There are also crucial processes of rescaling at the micro-level in relation to human bodies, human-machine hybrids, screen-based interaction and nanotechnologies, all of which mobilities research must address (see Licoppe, in this issue, on the restructuring of public space by multiplayer location-aware mobile gaming).

Mobilities thus seem to involve the analysis of complex systems that are neither perfectly ordered nor anarchic (Capra, 2002; Urry, 2003). There is an 'orderly disorder' present within dynamic or complex adaptive systems as analysed in recent formulations (Hayles, 1991, 1999; Prigogine, 1997; Byrne, 1998; Abbott, 2001; Urry, 2003b). Dynamic systems possess emergent properties. They develop over time so that national economies, corporations and households are locked into stable 'path dependent' practices, such as the steel-and-petroleum car: (Urry, 2004; and see Cohen, in this issue). Disaster is one trigger for systemic change. But systems can also change through the accumulation of small repetitions reaching a 'tipping point' as with the explosive growth of mobile phone use or communications between offices using faxes (Gladwell, 2002), or the small causes that could conceivably tip the car system into a post-car system (Urry, 2004).

An Agenda for Mobilities Research

In this section we outline some emerging agendas within mobilities research, mapping its main areas of concern, theoretical programmes and methodological tools. While certain critics argue that there is no analytical purchase in bringing together so broad a field – encompassing studies of corporeal movement,

transportation and communications infrastructures, capitalist spatial restructuring, migration and immigration, citizenship and transnationalism, and tourism and travel – we argue that the project needs to be developed further. Recent critical approaches have still had little effect in terms of how mainstream social science constitutes its object of inquiry. The new mobilities paradigm must be brought to bear, not only on questions of globalization and the deterritorialization of nation-states, identities and belonging, but more fundamentally on questions of what are the appropriate subjects and objects of social inquiry. Rifkin (2000, pp.191–193) notes that contemporary ‘science’ no longer sees anything ‘as static, fixed and given’; rather apparent hard and fast entities are always comprised of rapid movement and there is no structure separate from process. How do we frame questions and what methods are appropriate to social research in a context in which durable ‘entities’ of many kinds are shifting, morphing and mobile? Is there, or should there be, a new relation between ‘materialities’ and ‘mobilities’ in the social sciences? And how are our modes of ‘knowing’ being transformed by the very processes that we wish to study?

Migration, Tourism and Travel

Migration studies are crucial to the field of mobilities research. The early interest in theorizing nomadism and deterritorialization in the social sciences can in one direction be traced back to the critique of the colonial modes of ordering and knowing that informed much twentieth-century human sciences (Bhabha, 1994; Clifford & Dhareshwar, 1989; Clifford, 1992, 1997; Hall, 1990). Studies of migration, diasporas and transnational citizenship offered trenchant critiques of the bounded and static categories of nation, ethnicity, community, place and state within much social science (Basch *et al.*, 1994; Brah, 1996; Gilroy, 1993; Hannam, 2004a; Ifekwunigwe, 1999; Joseph, 1999; Ong, 1999; Ong & Nonini, 1997; Van der Veer, 1995). These works, drawn not only from the social sciences but also from literary and cultural studies, highlight dislocation, displacement, disjuncture and dialogism as widespread conditions of migrant subjectivity and ‘nomadism’ in the world today (see D’Andrea, in this issue, on neo-nomadism). At the same time, they also foreground acts of ‘homing’ (Brah, 1996; Fortier, 2000) and ‘re-grounding’ (Ahmed *et al.*, 2003), which point towards the complex interrelation between travel and dwelling, home and not-home. In leaving a place migrants often carry parts of it with them which are reassembled in the material form of souvenirs, textures, foods, colours, scents and sounds – reconfiguring the place of arrival both figuratively and imaginatively (Tolia-Kelly, 2006). And migrants frequently return home to visit friends and relatives while being ostensibly ‘on holiday’ in their country of origin (Duval, 2002; O’Reilly, 2003; Coles & Timothy, 2004).

Thus the relation between migration, return migration, tourism, transnationalism and diaspora is crucial to mobilities research. This implies attending to obligatory as well as voluntary forms of travel. In many cases travel is necessary for social life, enabling complex connections to be made, often as a matter of social, or political, obligation. And the ways in which physical movement pertains to upward and downward social mobility is also central here. Moving between places physically or virtually can be a source of status and power for backpackers and other round-the-world travellers (for example, see Richards & Wilson, 2004; Germann Molz, 2006) yet

where movement is coerced it can generate deprivation as with many migrants and refugees around the world (see Indra, 1998; Kofman, 2002) or forced re-settlement schemes for tribal populations in the face of tourism mobilities (see Hannam, 2005). Such mobilities become particularly apparent in so-called contact zones at the interstices of different countries where notions of citizenship can become highly contested and multiple identities become increasingly fluid (see Bianchi, 2000). Analysing mobilities thus involves examining many consequences for different peoples and places located in what we might call the fast and slow lanes of social life. There is the proliferation of places, technologies and 'gates' that enhance the mobilities of some while reinforcing the immobilities, or demobilization, of others, including that of children; (see for example Van Blerk, 2005; Gough & Franch, 2005; Winton, 2005).

Some people are mobile not through their own volition. For example, Cloke *et al.* (2003) in examining the complex mobilities of homeless people in rural England point out that despite the association of mobility with homelessness in such labels as 'tramps', 'transients' and 'drifters' emphasizing unsettled lives spent continually on the move, the mobility of homeless people is often actively encouraged by governments keen to move the 'problem' off their turf and onto someone else's. In the US this is apparent in the so-called 'Greyhound therapy' practice of states supplying homeless people with a bus ticket out of the state (see Wolch *et al.*, 1993). Such mobilities are of course heavily gendered; Ackers (1998) has shown that EU conceptualizations of citizenship rights and its implications for mobility and migration are often based upon a male 'breadwinner' model. The examples of the different gendered mobility of nurses and medical doctors are also pertinent here (see Ball, 2004; Brown & Connell, 2004), as is the gendered spread of HIV/AIDS through increased mobilities (see Campbell, 1997). Other feminist transnational studies have examined how various migrants have historically reconstituted belonging and mobilized place-based identities across geopolitical borders and urban boundaries (Joseph, 1999; Fortier, 2000; Franz, 2003; Secor, 2002; Tolia-Kelly, 2006).

Virtual and Informational Mobilities

People and places are continually on the move, but images and communications are also intermittently on the move and both actual and potential movements organize and structure social life. Mobilities research thus also includes movements of images and information on local, national and global media. The concept embraces one-to-one communications such as the telegraph, fax, telephone, mobile, as well as many-to-many communications effected through networked and increasingly embedded computers. The study of mobility also involves those immobile infrastructures that organize the intermittent flow of people, information and image, as well as the borders or 'gates' that limit, channel and regulate movement or anticipated movement. And it involves examining how the transporting of people *and* the communicating of messages, information and images increasingly converge and overlap through recent digitization and extension of wireless infrastructures, which are themselves promoted through images of movement (see Mackenzie, 2006). The emergence of high-tech 'e-topias' of wireless urbanism and 'u-cities' of ubiquitous computing and connectivity suggests a convergence of urban planning, transport planning and ubiquitous embedding of communications infrastructure.⁷

Studies of global human mobility need to be brought together with more 'local' concerns about everyday transportation, material cultures, and spatial relations of mobility and immobility, as well as with more 'technological' concerns about mobile information and communication technologies and emerging infrastructures of security and surveillance (see Adey, 2004; Germann Molz, 2006).⁸ Licoppe (in this issue) also shows how public encounters and spaces are being transformed by new practices of location-aware mobile gaming (and see Licoppe & Guillot, 2006).

For the 'global' elites the significance of such fluidities can be seen in Wittel's ethnography of 'network sociality' for some of those in the fast lane (and see Lassen, 2006 on the 'aeromobile' elite). This he says involves: 'cars, trains, buses and the underground, of airplanes, taxis and hotels, and it is based on phones, faxes, answering machines, voicemail, video-conferencing, mobiles, email, chat rooms, discussion forums, mailing lists and web sites' (Wittel, 2001, p.69). Axhausen (2002) notes the array of tools now necessary for successful 'networking': a car or the budget for taxis, budget and access for long-distance travel, location-free contact points, answering service, email, website, and sufficient time or assistance to manage these components especially when one or other 'fails'. Indeed the greater the proliferation of such 'tools' and hence the greater the networking possible, so the more that access to such tools is obligatory in order to participate fully in a 'networked society'. There is therefore a set of feedback mechanisms, a complex adaptive system, that extend the mobility-burden as the range of 'network tools' expands and heightens the range, extent and heterogeneity of social networks (Shove, 2002; see Kesselring & Vögl, 2006 on mobility pioneers). These networks can often be 'international' and this heightens the significance of such networking tools or what elsewhere has been developed as the notion of 'network capital' (see Larsen *et al.*, 2006).

Mobility Nodes and Spatial Mobilities

Social life thus seems full of multiple and extended connections often across long distances, but these are organized through certain nodes. Mobilities thus entail distinct social spaces that orchestrate new forms of social life around such nodes, for example, stations, hotels, motorways, resorts, airports, leisure complexes, cosmopolitan cities, beaches, galleries, roadside parks and so on (see Peters, 2006 on the roadside wilderness; and Normark, 2006 on petrol stations). These are places of intermittent movement constituting for some at least relatively smooth 'corridors', according to Lassen (2006).

Or connections might be enacted through less privileged spaces, on street-corners, subway stations, buses, public plazas, and back alleys where the less-privileged might use pay-phones, beepers or more recently short-text-messaging to organize illicit exchanges, meetings, political demonstrations or 'underground' social gatherings, what Rheingold (2002) terms 'smart mobs'. But as Law (2006) points out, we are not dealing with a single network, but with complex intersections of 'endless regimes of flow', which move at different speeds, scales and viscosities.

Also *contra* much transport research the time spent traveling is not dead time that people always seek to minimize. While the transport literature tends to distinguish travel from activities, the emerging mobilities paradigm posits that activities occur

while on the move, that being on the move can involve sets of ‘occasioned’ activities (Lyons & Urry, 2005). Research within the mobilities paradigm examines the embodied nature and experience of different modes of travel, seeing them in part as forms of material and sociable dwelling-in-motion, places of and for various activities (see Jokinen & Veijola, 1994; Crouch, 2000; Johnston, 2001; Featherstone *et al.*, 2004). These ‘activities’ can include specific forms of talk, work or information-gathering, but may involve simply being connected, maintaining a moving presence with others that holds the potential for many different convergences or divergences of physical presence (see Wong, 2006). Not only does a mobilities perspective lead us to discard our usual notions of spatiality and scale, but it also undermines existing linear assumptions about temporality and timing, which often assume that actors are able to do only one thing at a time, and that events follow each other in a linear order (see Callon *et al.*, 2004 on how the apparently absent can yet in effect be present).

Furthermore a clear distinction is often drawn between places and those travelling to such places. Places have frequently been seen as pushing or pulling people to visit. Places are often presumed to be relatively fixed, given and separate from those visiting. Instead we recognise that the notion of place although deceptively simple needs to be problematized (Shurmer-Smith & Hannam, 1994). The emerging mobilities paradigm thus argues against the ontology of distinct ‘places’ and ‘people’. Rather there is a complex relationality of places and persons connected through both performances (see Buscher, 2006; Edensor, 1999; Sheller & Urry, 2004) and performativities (Gregson & Rose, 2000; Harrison, 2000; Dewsbury, 2000; Knox 2001). Thus activities are not separate from the places that happen contingently to be visited. Indeed the places travelled to depend in part upon what is practised within them (Gogia, 2006). Moreover, many such performances are intermittently mobile ‘within’ the destination place itself; travel is not just a question of getting to the destination (see Sheller & Urry, 2004; Bærenholdt *et al.*, 2004). Places are thus not so much fixed but are implicated within complex networks by which ‘hosts, guests, buildings, objects and machines’ are contingently brought together to produce certain performances in certain places at certain times.

Places are indeed dynamic – ‘places of movement’ according to Hetherington (1997). Places are like ships, moving around and not necessarily staying in one location. In the emerging mobilities paradigm places themselves can be seen as becoming or traveling, slowly or quickly, through greater or shorter distances and within networks of both human and non-human agents. Places are about relationships, about the placing of peoples, materials, images and the systems of difference that they perform. We understand ‘where’ we are through ‘vision in motion’ (Buscher, 2006) practiced through the alignment of material objects, maps, images and a moving gaze (see also Kaplan, 2006). And at the same time as places are dynamic, they are also about proximities, about the bodily co-presence of people who happen to be in that place at that time, doing activities together, moments of physical proximity between people that make travel desirable or even obligatory for some (see Germann-Molz, 2006; Urry, 2003b).

Another emerging body of research examines various topologies of social networks and especially the patterns of weak ties that may generate ‘small worlds’ amongst those apparently unconnected (Granovetter, 1983; Watts, 1999, 2003;

Buchanan, 2002; Urry, 2004a). The nature of extensive weak ties stretching across time and space is important for examining putative global connections, as social life appears to move to a more networked model and where there is less likelihood of chance meetings (see discussion of network capital in Larsen *et al.*, 2005). Sometimes, though, the analysis of mobilities suggests that we need to move beyond network topologies, to also consider topologies that may be more fluid, gel-like or even flickering like fire (Mol & Law, 1994; Sheller, 2004c; Law, 2004, 2006). Theorizing how such complex patterns form and change will be crucial to future mobilities research as it intersects with scientific research into dynamic systems.

Materialities and Mobilities

While it began to be recognized in the social sciences by the 1980s that spatiality mattered (Soja, 1989), there is now a growing interest in the ways in which material 'stuff' makes up places, and such stuff is always in motion, being assembled and reassembled in changing configurations (Sheller & Urry, 2006b). Science and technology studies show how 'what we call the social is materially heterogeneous: talk, bodies, texts, machines, architectures, all of these and many more are implicated in and perform the social' (Law, 1994, p.2; and see Law, 2006). Mobile socio-technical systems should be analysed as hybrids, including even sewage systems in the contemporary city (Marvin & Medd, 2006). Mobilities involve complex 'hybrid geographies' (Whatmore, 2002) of humans and non-humans that contingently enable people and materials to move and to hold their shape as they move across various regions. Such analyses of hybrids also bring out that technologies do not necessarily produce effects and indeed new transport technologies are often very slow in their uptake (see Pooley, *et al.*, 2006). Networks are on occasions tightly coupled with complex, enduring and predictable connections between peoples, objects and technologies across multiple and distant spaces and times (Murdoch, 1995; Law, 1994). Things are made *close* through these networked relations. Such assemblages extend not only to physical movement but new forms of surveillant assemblages.

There are hybrid systems, 'materialities and mobilities' that combine objects, technologies, socialities and affects out of which distinct places are produced and reproduced. Crucial to the recognition of the materialities of mobilities is the re-centring of the corporeal body as an affective vehicle through which we sense place and movement, and construct emotional geographies (Crouch, 2000; Bondi *et al.*, 2005). Imaginative travel, for example, involves experiencing or anticipating in one's imagination the 'atmosphere of place'. Atmosphere is neither reducible to the material infrastructures nor to the discourses of representation. It would involve multimedia methods (Halgren, 2004). The atmosphere or 'feeling' of particular kinds of movement is often a concern in the poetry and literature of exile and displacement, and is central to practices of re-imagining of traumatic events such as the slave trade (see Timothy & Teye, 2004). Social research needs to be more attentive to researching the affective dimension both of its subjects of research, and of its own performances.

Mobilities especially involve occasioned, intermittent face-to-face conversations and meetings within certain places at certain moments that seem obligatory for the

sustaining of families, friendship, workgroups, businesses and leisure organizations (this is shown in detail in Larsen *et al.*, 2005; see Amin & Thrift, 2002). Thus it is necessary to draw upon interactional, conversational and biological analyses of how people read and interpret the face and the body (see Goffman, 1963, 1971, 1972; Hutchby, 2001; Thrift, 2006; as well as Frisby & Featherstone, 1997 on Simmel) as well as conducting new forms of ‘mobile ethnography’.⁹ Various analyses show how means of travel are not only ways of getting as quickly as possible from A to B. Each means provides different experiences, performances and affordances.¹⁰ The growth of the railway in the late nineteenth century provided new ways of moving, socializing and seeing (Schivelbusch, 1986; see also Wong, 2006 on the rickshaw). The car too is increasingly revealed through studies as a place of ‘dwelling’ or corporeal inhabitation. It is experienced through a combination of senses and sensed through multiple registers of motion and emotion (Featherstone *et al.*, 2004; Sheller, 2004b, 2006).

There is a complex sensuous ‘relationality’ between the means of travel and the traveller. Such sensuous geographies are not only located within individual bodies, but extend to familial spaces, neighborhoods, regions, national cultures and leisure spaces with particular kinaesthetic dispositions (Rodaway, 1994; Edensor, 2002; Peters, 2006). Much travel and communication involves the active development and performances of ‘memory’ (see Small, 1999). This necessitates research methods that simulate the active employment of photographs, postcards, letters, images, guides, souvenirs and objects (see for example Sontag, 1979; Collier & Collier, 1986; Albers & James, 1988; Bourdieu, 1990; Cohen *et al.*, 1992; Markwell, 1997; Selwyn, 1996; Fountain, 2004). Lury (1997) meanwhile has theorized different kinds of ‘traveling objects’, and cultural geographers have often examined the kinds of pictures and objects that people carry with them and use to reassemble memories, practices and even landscapes in their varied sites of dwelling, thus re-making the materiality of places of migration (see Tolia-Kelly, 2006).

Mobilities Futures

We have traced some of the crucial empirical and theoretical constituents of the emerging field of mobilities research, and illustrated its application in a wide range of substantive areas. We hope to have made a strong case for its importance, relevance and vibrancy as an approach that offers both theoretical and methodological purchase on a wide range of urgent contemporary issues, as well as new perspectives on certain historical questions. This brief introduction to the field emphasizes several crucial aspects of mobilities research:

- an emphasis on the relation between human mobilities and immobilities, and the unequal power relations which unevenly distribute motility, the potential for mobility;
- an analysis of the relation between mobility systems and infrastructural moorings, especially as pertains to the rescaling and restructuring of spatiality under different regimes of economic regulation and state and urban governance;
- an appreciation of the complexity of mobility systems and the inter-relational dynamics between physical, informational, virtual and imaginative forms of mobility;

- a programme for risk analysis and disaster assessment as a crucial aspect of mobilities research.

This and future issues of *Mobilities* will begin the project of opening up these new avenues of social research, facilitating the crossing of disciplinary boundaries, bringing new theoretical tools to bear on empirical problems, and enabling conversations between academic and policy arenas.

Notes

1. Some recent contributions to forming and stabilizing this new paradigm include contributions from anthropology, cultural studies, gender and women's studies, geography, migration studies, science and technology studies, tourism studies, and sociology and social theory. The editors of this journal are very grateful to these authors, to the members of the editorial board and to the wider 'mobilities community' worldwide. They are most grateful to Pennie Drinkall for assembling very diverse materials into a hopefully coherent first issue of *Mobilities*.
2. The twenty-first century, in some respects, will be organized around new 'machines' enabling 'people' to be more individually mobile through space, forming small world connections 'on the go'. 'Persons' will occur as various nodes in multiple machines of inhabitation and mobility. Through inhabiting, or internalizing, such machines humans come to 'live'. Such machines are miniaturized, privatized, digitized and mobilized; they include walkmans, nano-sized I-pods, mobile phones, the individual TV, the networked computer/Internet, the individualised smart car/bike, virtual reality 'travel', tele-immersion sites, laptops, personal organisers, wireless connections, helicopters, smart small aircraft and many others yet to emerge. Such machines are closely interwoven with the corporeal, (see Bull, 2000, on the Sony Walkman; Licoppe & Guillot, 2006; and Licoppe, in this issue, on mobile gaming; Mackenzie, 2006 on WiFi; and see Callon *et al.*, 2004).
3. Similarly, thousands of apparently inconsequential movements of sheep combined with various transnational movements of meat and airplanes to produce the rapid spread of foot and mouth disease during the UK outbreak of 2001. Law (2006) shows how increased abattoir hygiene generated increased pig and sheep movements around Britain, which spread foot and mouth disease much more quickly. Systems are so tightly coupled that efforts to logistically separate control systems over flows of animals, meat-products, airplanes, walkers and diseases break down in the face of unpredictable formations such as those that might allow suspect meat in airport containers to somehow reach swine feed, or prions in cow tissue to somehow reach human brains.
4. The effort to evacuate the city of Houston under threat from Hurricane Rita produced a traffic jam of epic proportions, and with it deaths by dehydration and another tragic inferno engulfing a bus carrying the elderly and infirm. These events were shortly followed by major typhoons in Asia, and tropical storms in Central America, which also took many lives. Earlier hurricanes that have hit the Caribbean in recent years have received far less media attention, yet were equally devastating.
5. The ports of southeastern Louisiana are the main gateway to the US interior and among the busiest in the US, handling most of the country's grain, wheat, corn, rice, barley, rye, oats, sorghum., a significant portion of its chemical and energy products, and importing raw materials like iron ore, fertilizer and scrap metal.
6. Complaints have also arisen as contractors have brought in undocumented transient workers for low-paid reconstruction work and then unlawfully housed them at Red Cross shelters for hurricane victims.
7. Finland piloted the building of 'the world's first truly wireless community' in Arbianranta in the 1990s (Sheller, 2004c); today South Korea is spending \$25 billion in the construction of New Songdo, the world's largest 'ubiquitous city' with a high-tech infrastructure digitally linking homes, streets and businesses.
8. There are varied methods of 'cyber-research' that explore the imaginative and virtual mobilities of people via their websites, multi-user discussion groups or listserves, 'blogging', as well as through the use of computer simulations. Germann-Molz (2006) for example, uses 'cyberethnography' to

explore the interplay between round-the-world-travel and round-the-world travelers' websites through a method combining web-surfing, in-person and email interviewing, and interaction in interactive sites and discussion groups.

9. There are several emerging forms of 'mobile ethnography', which involve participation in patterns of movement while conducting ethnographic research which follows the movements of either people or objects as they circulate (Schein, 2002; Morris, 2004; Spitulnik, 2002; Laurier, 2002; Bærenholdt *et al.*, 2004).
10. The concept of 'affordances' is drawn from James Gibson's (1979) work on visual perception and intentional movement of the whole 'body-person'. Perception in his view is a mode of action involving the ceaseless performance of connections between a being and the world around it; it is an 'education of attention' that promotes an appreciation of nature's 'affordances' (Gibson 1979: 127-143). A tree, for example, affords us the opportunity of climbing it; a handle affords us the opportunity of grasping something. Tim Ingold (2000) draws on Gibson as well as the phenomenological approach of Maurice Merleau-Ponty (1962 [1945]), to examine how human beings are positioned not as separate from, but as intricately bound up within the world's complexity and dynamism. Perceptions emerge via involved activity with objects and other beings. Thus there are ambivalent and contested 'affordances' that 'stem from the reciprocity between the environment and the organism, deriving from how people are kinaesthetically active within their world' (Macnaghten and Urry 2001: 169; and see Costall 1995).

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