

# **Constellations of Mobility**

**Tim Cresswell**

**Department of Geography**

**Royal Holloway, University of London**

**Egham, Surrey, TW20 0EX**

**UK**

**Email: [tim.Cresswell@rhul.ac.uk](mailto:tim.Cresswell@rhul.ac.uk)**

Word count (body of paper 8021, full text including abstract and references 9500)

## **Constellations of Mobility**

### **Abstract**

This paper proposes an approach to mobility that takes both historical mobilities and forms of immobility seriously. It is argued that is important for the development of a politics of mobility. To do this it suggests that mobility can be thought of as an entanglement of movement, meaning and practice. Following this it argues for a more finely developed politics of mobility that thinks below the level of mobility and immobility in terms of motive force, speed, rhythm, route, experience and friction. Finally it outlines a notion of ‘constellations of mobility’ that entail a considering the historical existence of fragile senses of movement, meaning and practice that each entailed forms of mobile politics and regulation.

### **Introduction**

The last few years have seen the announcement of a “new mobilities paradigm” (Sheller and Urry, 2006b; Hannam, Sheller, and Urry, 2006), the launch of the journal *Mobilities* and a number of key texts and edited collections devoted to mobility (Sheller and Urry, 2006a; Urry, 2000; Cresswell, 2006; Kaufmann, 2002; Uteng and Cresswell, 2008; Cresswell and Merriman, 2008; Bærenholdt and Simonsen, 2004). Work inspired by the “new mobilities paradigm” has informed a diverse array of work on particular forms and spaces of mobility ranging from driving and roads (Urry, 2004; Merriman, 2007; Beckmann, 2001) to flying and airports (Adey, 2004a, 2004b). This is not the place to review the work on mobility (see (Blunt, 2007)) Rather I want to engage with the idea of a “new mobilities paradigm” and develop some of the ideas associated with it. More

precisely this paper's aims are fivefold. First to suggest some problems with the notion of a "new mobilities paradigm" and to outline the importance of both "old mobilities" and, indeed, "immobilities" in understanding contemporary spatialities. Second to consider the role of physical movement, meanings of mobility and mobile practices in understanding mobility. Fourth to fine-tune accounts of the 'politics of mobility' by considering the roles of motive force, velocity, rhythm, route, experience and friction in the production of mobile hierarchies and finally to suggest the utility of the notion of constellations of mobility.

### **The new mobilities paradigm?**

Bruno Latour has suggested that there are only three problems with the term Actor Network Theory - and they are the words "actor", "network" and "theory" (Latour, 2005). A similar point could be made of "new mobilities paradigm". First of all the work "paradigm" suggests the Kuhnian notion of normal science being transformed by sudden revolutions where what went previously is unceremoniously tipped into the junkheap of academic history (Kuhn, 1996). We have to be careful about such implications. Any study of mobility runs the risk of suggesting that the (allegedly) immobile - notions such as boundaries and borders, place, territory and landscape - is of the past and no longer relevant to the dynamic world of the 21st Century. This would be wrong and, to be fair, does not seem to be the point of advocates of the new mobilities paradigm where "moorings" are often as important as "mobilities". The second problem concerns the different ways the "new mobilities" bit can be read. If the emphasis is on the word "new" then this suggests an old mobilities paradigm. If the emphasis is on the word "mobilities" then this suggests that old paradigms were about the immobile or sedentary. The second

of these options seems untenable because movements of one kind or another have been at the heart of all kinds of social science (and particularly geography) since their inception. In sociology notions of movement and mobility were central to the concerns of thinkers such as Georg Simmel and the Chicago School sociologists for instance (Simmel, 1950; Park and Burgess, 1925). If we think of geography there have been any number of sub-disciplinary concerns with things and people on the move ranging from Saurian concerns with origins and dispersals (Sauer, 1952) through spatial science's fixations of gravity models and spatial interaction theory (Abler, Adams, and Gould, 1971) and notions of "plastic space" (Forer, 1978) to feminist approaches to daily mobility patterns (Hanson and Pratt, 1995; Pickup, 1988). Transport geography, migration theory, time geographies, geographies of tourism - the list is endless. The same could be said of anthropology. So the question that arises is, what is "new" about the new mobilities paradigm?

Despite all the caveats above there clearly is something "new" about the ways mobilities are being approached currently that distinguishes them from earlier accounts of movement, migration and transport (to name but three of the modes of mobility that have long been considered). If nothing else, the "mobilities" approach brings together a diverse array of forms of movement across scales ranging from the body (or, indeed parts of the body) to the globe. These substantive areas of research would have been formally held apart by disciplinary and sub-disciplinary boundaries that mitigated against a more holistic understanding of mobilities. In addition, the approaches listed above were rarely actually *about* mobility but rather took human movement as a given – an empty space that needed to be expunged or limited. In migration theory movement occurred because one place pushed people out and another place pulled people in. So despite being about

movement, it was really about places. Similarly transport studies have too often thought of time in transit as ‘dead time’ in which nothing happens – a problem that can be solved technically. Mobility studies have begun to take the actual fact of movement seriously. Here I further develop such an approach by focusing on the entanglement of the fact of movement, meaning and power. In this formulation mobility exists in the same relation to movement as place does to location. I develop this notion in more detail taking forward some of the approach to mobility recently developed in *On the Move* (Cresswell, 2006) and suggested by Norman Bryson in his arguments for a new field of “social kinetics” (Bryson, 1997) - a field which would chart the history of socially-structured movement. While the term kinetics has a residual scientism about it and the adjective social is much abused, I build on this notion to suggest a way of thinking about mobilities that brings together more or less coherent, if fragile, constellations of physical movement, meanings and practices. I want, then, to understand mobility holistically, as part of historically specific constellations of mobility that pervade a multitude of specific instances of people on the move.

### **Movement, Meaning, Practice**

Consider, then, these three aspects of mobility: the fact of physical movement - getting from one place to another; the meanings that movement is given - discourses, narratives and stories about the fact of movement; and finally the experienced and embodied practice of movement. Different forms of mobility research are likely to explore facets of any one of these. Transport researchers, for instance, have developed ways of telling us about the fact of movement; how often it happens, at what speeds and where. Recently

they have also informed us about who moves and how identity might make a difference (Bullard and Johnson, 1997; Hoyle et al., 1998). They have not been so good at telling us about the meanings of mobility either at the individual level or at a societal level. Neither have they told us how it feels to move in one way rather than another. The experience of mobility has never been at the top of the agenda in transport studies. Understanding mobility holistically means paying attention to all three of these aspects.

Physical movement is, if you like, the raw material for the production of mobility. People move, things move, ideas move. The movement can, given the right equipment, be measured and mapped. These measurements can be passed through equations and laws can be derived from them. This positivist analysis of movement occurs in all manner of domains. The physical movement of the human body has been extracted from real bodies and used to develop model mobilities for, amongst other things, sports therapy, animation and factory motion studies (Price, 1989; Yanarella and Reid, 1996). In cities transport planners are endlessly creating models of mechanically aided physical movement in order to make transport more efficient, or less environmentally harmful (Eliasson and Mattson, 2005). In airports and railway stations modelers have used critical path analysis to measure the time taken to get between two points and then reduce it (Adey, 2004a). So understanding physical movement is one aspect of mobility. But this says next to nothing about what these mobilities mean or how it is experienced.

Just as there has been a multitude of efforts to measure and model mobility so there has been a plethora of mobility narratives. Mobility has been figured as adventure, as tedium, as education, as freedom, as modern, as threatening. Think of the contemporary links made between immigrant mobilities and notions of threat reflected in

metaphors of flooding and swamping (White, 2002; Tuitt, 1996). Think of the idea of the right to mobility as fundamental to modern western citizenship (Blomley, 1994b). Think of all the meanings wrapped up in car advertisements or mobile phones. To take just one kind of mobile practice, the simple act of walking has been invested with a profound array of meanings from conformity to rebellion (Solnit, 2000). Geographers, social theorists and others have been complicit in the weaving of narratives around mobility. We have alternately coded mobility as dysfunctional, as inauthentic and rootless and, more recently as liberating, anti-foundational and transgressive (Cresswell, 2001).

Finally there is practice. Human mobility is experienced mobility. Sometimes we are tired and moving is painful, Sometimes we move with hope and a spring in our step. As we approach immigration at the airport the way our mobility feels depends on who we are and what we can expect when we reach the front of the line. Driving a car is liberating, or nerve wracking, or, increasingly, guilt-ridden. Whether we have chosen to be mobile or have been forced into it effects our experience of it. Sometimes our mobile practices conform to the narratives that surround them, We do, indeed, experience mobility as freedom as the airplane takes off and the undercarriage retracts. At other times there is a dissonance between meaning and practice. As we sit in a traffic jam maybe. Getting from A to B can be very different depending on which mobile practice we employ. Any consideration of mobility has to include the kinds of things people do when they move in various ways. Walking, dancing, driving, flying, running, sailing. All of these are mobile practices. Practices such as these have played important roles in the construction of social and cultural theory, philosophy and fiction. Take walking for instance. We can think of the way Michel de Certeau uses walking to examine the spatial

grammar of the city that provides a pre-constructed stage for the cunning tactics of the walk.

The long poem of walking manipulates spatial organizations, no matter how panoptic they may be: it is neither foreign to them (it can take place only within them) nor in conformity with them (it does not receive its identity from them). It creates shadows and ambiguities within them (de Certeau, 1984, 101).

This story about walking replicates a number of literatures in which the walker is held forth as an exemplar of rebellion, freedom and agency in the city – the pedestrian hero (Berman, 1988) or the flaneur (Tester, 1994). Practices are not just practices of getting from A to B, they are discursively constituted. The possibility of walking is wrapped up in narratives of worthiness, morality and aesthetics that constantly contrast it with more mechanized forms of movement which are described as less authentic, less worthy, less ethical (Thrift, 2004). And it matters where walking happens - the walk in nineteenth century Paris is very different from the walk in rural Mali or the walk in the contemporary British countryside.

In addition to being a traceable and mappable physical movement which is encoded with a variety of narratives, walking is also an embodied practice that we experience in ways that are not wholly accounted for by either their objective dimensions or their social and culture dimensions. Here the approaches of both phenomenological inquiry and forms of non-representational theory give insight into the walking experience (Wylie, 2005; Ingold, 2004). Similar sets of observations could be made about all forms of mobility – they have a physical reality, they are encoded culturally and socially and



they are experienced through practice. Importantly these forms of mobility (walking, driving etc.) and these aspects of mobilities (movement, meaning and practice) are political – they are implicated in the production of power and relations of domination.

### **The Politics of Mobility**

Mobility is a resource which is differentially accessed. One person's speed is another person's slowness. Some move in such a way that others get fixed in place. Examples of this abound. Consider the school run that allows women (for the most part) to enact an efficient form of mobility so often denied them. At the same time it impacts on the ability of children to walk to school and makes the streets less safe for pedestrians. There is little that is straightforward about such an entanglement. Consider the opening up of borders in the European Union to enable the enactment of the EU mantra of free mobility. This in turn depends on the closing down of mobilities at the borders (often airports) of the new Europe (Verstraete, 2001; Balibar, 2004). Speeds, slownesses and immobilities are all related in ways that are thoroughly infused with power.

This politics of mobility is enriched if we think about mobility in terms of material movement, meaning and practice. There is clearly a politics to material movement. Who moves furthest? who moves fastest? who moves most often? These are all important components of the politics of mobility that can be answered in part by the traditional approaches of transport studies. But this is only the beginning. There is also a politics of meaning. How is mobility discursively constituted? What narratives have been constructed about mobility? How are mobilities represented? Some of the foundational narratives of modernity have been constructed around the brute fact of moving. Mobility

as liberty, mobility as progress. Everyday language reveals some of the meanings that accompany the idea of movement. We are always trying to get somewhere. No-one wants to be stuck or bogged down. These stories appear everywhere from car advertisements to political economic theory. Consider the act of walking once again. The disability theorist Michael Oliver has suggested that there is an ideology of walking that gives the fact of walking a set of meanings associated with being human and being masculine. Not being able to walk thus falls short of being fully human. Popular culture tells us that “walking tall” is a sure sign of manhood, medical professionals dedicate themselves to the quest to make those who can’t walk, walk again. All manner of technologies are developed to allow people to walk. The effect of such an ambulatory culture, he tells us, can be quite devastating on those who are being “treated”. As Oliver puts it “Not-walking or rejecting nearly walking as a personal choice threatens the power of professionals, it exposes the ideology of normality and it challenges the whole rehabilitation exercise” (Oliver, 1996, 104). Here mobility and, particularly the meanings associated with particular practices, is highly political.

Finally, and perhaps most importantly of all, there is a politics of mobile practice. How is mobility experienced? How comfortable is it? Is it forced or free? A line of a map linking A and B may be experienced completely differently by a man and a woman, or a businessman and a domestic servant, or a tourist and a refugee. The fact of movement, the meanings attached to it and the experienced practice are all connected. The meaning given to movement can certainly impact on the experience of its practice. Think about Mexican immigrants in the United States for instance. Compare that to a member of a multi-national corporation jetting between world cities. Consider the image of a train

with Pullman carriages steaming through the landscape of late nineteenth century America. Here is a description from a journalist in the Chicago News.

The world respects the rich man who turned to be a globe-trotter and uses first class cabins and Pullman cars, but has inclination to look over his shoulder at the hobo who, to satisfy this so strong impulse, is compelled to use box-cars, slip the board under the Pullman or in other ways whistle on the safety of his life and integrity of his bones.

(Ernest Burgess archives of the University of Chicago Special Collections, box126, p.13)

Here we have exactly the same act of moving from A to B but completely different practices of mobility and sets of meanings associated with them. The globe-trotter sits in plush velvet seats and chooses from extensive wine lists while the hobo travels close to death on a wooden plank precariously balanced on the same carriage's axels. The mobile subject "globe-trotter" signifies a different world from the mobile subject "hobo". The narratives and discourses surrounding them both make their mobilities possible and impact upon these very different practices. Indeed, just fifty years earlier the subject identities of "globe-trotter" and "hobo" did not exist just as the Pullman carriage or the transcontinental railroad did not exist. These mobile spaces, subjects and practices were all entangled in that particular moment.

To recap, I want to develop an approach to human mobility that considers the fact of movement, the meanings attached to movement and the experienced practice of movement. Taking all these facets seriously, I argue, will help us delineate the politics of mobility. And this is important as there seems little doubt that mobility is one of the

major resources of 21st Century life and that it is the differential distribution of this resource that produces some of the starkest differences today.

But this argument is still more suggestive than specific. There remains the task of breaking mobility down into different aspects of moving that each have a role to play in the constitution of mobile hierarchies and the politics of mobility. In the process of breaking mobility down in this way we get some analytical purchase on how mobility becomes political. Below I outline six aspects of mobility that each has a politics that it is necessary to consider. Following this I trace a very brief history of the regulation of mobility and suggest some of the issues that confront us in the world today.

First of all *why does a person or thing move?* An object has to have a force applied to it before it can move. With humans this force is complicated by the fact that it can be internal as well as external. A major distinction in such motive force is thus between being compelled to move or choosing to move. This is the distinction at the heart of Bauman's discussion of the tourist and the vagabond.

Those "high up" are satisfied that they travel through life by their heart's desire and pick and choose their destinations according to the joys they offer. Those "low down" happen time and again to be thrown out from the site they would rather stay in (...) If they do not move, it is often the site that is pulled away from under their feet, so it feels like being on the move anyway. (Bauman, 1998, 86-87)

Of course the difference between choosing and not choosing is never straightforward and there are clearly degrees of necessity. Even the members of the kinetic elite who appear to move so easily through the world of flows must feel obligated to sign in to airport hotels and book first class flights to destinations twelve time zones away. Nevertheless, this basic difference in mobilities is central to any hierarchy and thus any politics of mobility. To choose to move or, conversely, stay still, is central to various conceptions of human rights within the nation-state (Blomley, 1994a) and within “universal” regimes (Sassen, 1999).

Second - *how fast does a person or thing move?* Velocity is a valuable resource and the subject of considerable cultural investment (Kern, 1983; Tomlinson, 2007; Virilio, 1986). To Paul Virilio speed, connected to the development of military technology in particular, is the prime engine for historical development. In *Speed and Politics* and elsewhere he paints a picture of ever-increasing velocity overwhelming humanity. Even such apparently fixed things as territory, he argues are produced through variable speeds rather than through law and fixity. He proposes a “science of speed”, or *dromology*, to help us understand our present predicament. The faster we get, Virilio argues, the more our freedoms are threatened:

The blindness of the speed of means of communicating destruction is not a liberation from geographical servitude, but the extermination of space as the field of freedom of political action. We only need refer to the necessary controls and constraints on the railway, airway or highway infrastructures to see the fatal impulse: the more speed increases, the faster freedom

decreases (Virilio, 1986, 142)

At its extreme, speed becomes immediacy – the speed of light that Virilio claims is at the heart of globalization. This is the speed with which information can travel around the globe having profound impacts of relatively solid, relatively permanent, places (Thrift, 1994; Tomlinson, 2007).

But speed of a more human kind is at the centre of hierarchies of mobility. Being able to get somewhere quickly is increasingly associated with exclusivity. Even in air travel - where, since the demise of Concorde, all classes of passenger travel at the same speed those “high up”, as Bauman would put it, are able to pass smoothly through the airport to the car that has been parked in special lot close to the terminal. In airports such as Amsterdam’s Schiphol, frequent business travellers are able to sign up to the Privium scheme where they volunteer to have their iris scanned to allow biometric processing in the fast lane of immigration. This frees up immigration officials to monitor the slow lane of foreign arrivals who are not frequent business travellers. Speed and slowness are often logically and operationally related in this way. And it is not always high velocities that are the valued ones. Consider the slow food and slow culture movements. How bourgeois can you get? Who has the time and space to be slow by choice? As John Tomlinson has put it in relation to the Italian slow city movement, CittàSlow:

... CittàSlow, in promoting the development of small towns (of 50,000 inhabitants or less) represents the interests of a particular spatial-cultural constituency and related localized form of capital. In a sense them, and without being unduly cynical, [CittàSlow] could be seen as defending enclaves of interest, rather than offering plausible models for more general

social transformation (Tomlinson, 2007, 147)

For some, slowness is impossible. Consider the workers in Charlie Chaplin's *Modern Times*. In its famous opening scenes we see a line of workers at a conveyor belt tightening nuts on some unspecified element of a mass production line. The factory boss is seen reading the paper and enjoying a leisurely breakfast. This is interrupted only when he makes occasional demands for "more speed" on the production line below. Here the principles of Taylorism are used by Chaplin to satirise the production of speed among workers through time and motion study (Cresswell 2001). Here speed is definitely not a luxury. Rather it is an imposition experienced by those "low down".

Third - *in what rhythm does a person or thing move?* Rhythm is an important component of mobility at many different scales (Lefebvre, 2004; Mels, 2004). Rhythms are composed of repeated moments of movement and rest, or, alternatively, simply repeated movements with a particular measure. Lefebvre's outline of rhythm analysis as a method of interpreting the social world is richly suggestive. Consider this extract from a passage in which Lefebvre describes the scene of a popular square in Paris from his balcony window.

The noise grows, grows in intensity and strength, at its peak becomes unbearable, though quite well borne by the stench of fumes. Then stop.

Let's do it again, with more pedestrians. Two minute intervals. Amidst the fury of the cars, the pedestrians cluster together, a clot here, a lump over there; grey dominates, with multicoloured flecks, and these heaps break apart for the race ahead. Sometimes, the old cars stall in the middle of the

road and the pedestrians move around them like waves around a rock, though not without condemning the rivers of the badly placed vehicles with withering looks. Hard rhythms; alternations of silence and outburst, time both broken and accentuated, striking he who takes to listening from his window, which astonishes him more than the disparate movements of the crowds. (Lefebvre, 2004, 29)

Such a description of rhythm in public space brings to mind the more phenomenological conceptions of ‘Place-Ballet’ developed by David Seamon and recently re-incorporated into a geography of rhythms by Tom Mels (Mels, 2004; Seamon, 1979). But unlike Seamon, Lefebvre delineates how rhythms, such as those visible on any such city square, are simultaneously organic, lived and endogenous and exterior, imposed and mechanical. Frequently the exterior rhythm of rationalized time and space comes into contradiction with lived and embodied rhythm: “Rhythm appears as regulated time, governed by rational laws, but in contact with what is least rational in human being, the lived, the carnal, the body” (Lefebvre, 2004, 9). Rhythm, to Lefebvre, is part of the production of everyday life, thus: “rhythm seems natural, spontaneous, with no law other than its own unfurling. Yet rhythm, always particular (music, poetry, dance, gymnastics, work, etc.) always implies a measure. Everywhere there is rhythm, there is measure, which is to say law, calculated and expected obligation, a project” (Lefebvre, 2004, 8). Rhythm, then, is part of any social order or historical period. Senses of movement include these historical senses of rhythm within them. Even the supposedly organic embodied rhythms of the walker very historically: “Old films show that our way of walking has altered over the course of our century: once jauntier, a rhythm that cannot be explained by the capturing



of images” (Lefebvre, 2004, 38).

Crucially, for Lefebvre, rhythm is implicated in the production and contestation of social order for “objectively, for there to be change, a social group, a class or a caste must intervene by imprinting a rhythm on an era, be it through force or in an insinuating manner” (Lefebvre, 2004, 14). Indeed, it is possible to see a particular politics of rhythm across a range of human activities. The rhythms of some kinds of music and dance, for instance, have famously upset those “high up”. Jazz, punk and rave are but three examples of rhythms that have proved anxiety provoking to certain onlookers (Cresswell, 2006). In the case of rave this led to the Criminal Justice Act of 1994 in the United Kingdom that explicitly referred to repetitive rhythms amongst its reasons for cracking down on people having fun. But rhythm is important in more sinister ways. Motion studies experts, Frank and Lillian Gilbreth were concerned with much more than speed in their efforts to increase worker productivity in the factory. Rhythm was an important component of their ‘scientific management’ techniques. It was one of their essential principles of motion economy to “build rhythm and automaticity into the operation” (quoted in Cresswell, 2006, 106).

‘Gait analysis’ can now identify bodies moving with curious rhythms in airports and mark them for extensive searches and intensive surveillance. A strange rhythm of movements over a longer time period can similarly mark a person out. Too many one-way trips, journeys at irregular intervals, or sudden bursts of mobility can make someone suspect. Alongside these curious rhythms are the implicit correct and regular movements of the daily commute, the respectable dance or the regular movements of European business people through airports. There is an aesthetics of correct mobility that mixes

with a politics of mobility.

Fourth - *What route does it take?* Mobility is channelled. It moves along routes and conduits often provided by conduits in space. It does not happen evenly over a continuous space like spilt water flowing over a table top. In Deleuze and Guattari's account of nomadology they point out that it is not simply a case of free, mobile nomads challenging the 'royal science' of fixed division and classification. Mobility itself is 'channeled' into acceptable conduits. Smooth space (the space of the nomad) is a field without conduits or channels

The State needs to subordinate hydraulic force to conduits, pipes, embankments, which prevent turbulence, which constrain movement to go from one point to another, and space itself to be striated and measured, which makes the fluid depend on the solid, and flows proceed by parallel, laminar layers. The hydraulic model of nomad science and the War Machine, on the other hand, consists in being distributed by turbulence across a smooth space, in producing a movement that holds space and simultaneously affects all of its points, instead of being held by space in a local movement from one specified point to another. (Deleuze and Guattari, 1987, 362).

Producing order and predictability is not simply a matter of fixing in space but of channeling motion – of producing correct mobilities through the designation of routes.

Stephen Graham and Simon Marvin have developed the notion of a "tunneling effect" in the contemporary urban landscape (Graham and Marvin, 2001). They show

how the time-space of cities is warped by the routing of infrastructural elements ranging from roads to high-speed computer links. Valued areas of the metropolis are targeted so that they are drawn into “intense interaction with each other” while other areas are effectively disconnected from these routes (Graham and Marvin, 2001, 201). Think of highways which pass through the landscape but only let you get off at major hubs. Or think of high speed train lines that pass from airport to city centre while by-passing the inner-city in between. These ‘tunnels’ facilitate speed for some while ensuring the slowness of those who are by-passed. Routes provide connectivity which in turn transforms topographical space into topological and, indeed, dromological space: “Space-time no longer corresponds to Euclidean space. Distance is no longer the relevant variable in assessing accessibility. Connectivity (being in relation to) is added to, or even imposed upon, contiguity (being next to)” (Offner, quoted in Graham and Marvin, 2001, 200).

**Think of the development of a commuter rail network in Los Angeles. Built at huge expense to facilitate speedy transit from suburb to city centre it effectively by-passed the predominantly black and Hispanic areas of the city. While train riders were disproportionately white, bus riders were overwhelmingly black, Hispanic and female. A radical social movement, the Bus Riders Union, took the Metropolitan Transit Association (MTA) to court in order to halt the use of public money to fund the train system at the expense of the bus system. In court the MTA made the claim that train lines passed through many minority areas of the city such as Watts. In response, the Bus Riders Union argued that the population of areas the train lines passed through was not the relevant fact. The arrival of the train line had been matched by the removal of bus services. While the bus services had stopped frequently along the corridor (serving a 95% minority community) the train hardly stopped at all and thus tended to serve white commuters traveling comparatively long distances. In addition, the BRU pointed out that the Blue Line was built at grade (rather than being underground or elevated), and had resulted in a high number of accidents and deaths in inner-city minority**

**communities. So not only did the rail system produce ‘tunneling effects’ by passing through minority areas it was also logically and economically related to a decrease in convenient bus routes and an increase in rates of death and injuries among inner city residents (Cresswell, 2006).**

Fifth - *How does it feel?* Human mobility, like place, surely has the notion of experience at its centre. Thus Bob Dylan’s question “How does it feel? To be on your own? With no direction home? Like a rolling stone?” is a pertinent one. Moving is an energy-consuming business. It can be hard work. It can also be a moment of luxury and pampering. The arrangement of seats on a trans-Atlantic flight is an almost perfect metaphor for an experiential politics of mobility. Upper, first of connoisseur class provides you with more space, nicer food, more oxygen, more toilets per person, massage, limousine service, media on line. Those at the back are cramped, uncomfortable, oxygen-starved and standing in line for the toilet. And then there might be the body, frozen and suffocated in the under-carriage well waiting to drop out in a suburb of a global city.

Consider walking once more. Tim Ingold has described how walking (and pretty much all manner of traveling) was experienced as drudgery and work by the well to do. “The affluent did not undertake to travel for its own sake, however, or for the experience it might afford. Indeed the actual process of travel, especially on foot, was considered a drudge – literally a travail– that had to be endured for the sole purpose of reaching a destination” (Ingold, 2004, 321). Before the Romantic poets turned walking into an experience of virtue “Walking was for the poor, the criminal, the young, and above all, the ignorant (...). Only in the 19th century, following the example set by Wordsworth and Coleridge, did people of leisure take to walking as an end in itself, beyond the confines of the landscaped garden or gallery” (Ingold, 2004, 322). And even then the

experience of walking was connected to the development of mechanized forms of transport that allowed the well to do to get to scenic environments for walking. Poor people, unaffected by the peripatetic poetry of Wordsworth and Coleridge, presumably did not experience walking in a new, more positive way. It was still drudgery.

Or consider the experience of a Los Angeles domestic servant, dependent on the bus system for getting her kids to school and herself to work. All kinds of statistics and maps can be, and have been, used to demonstrate the inequalities inherent in the public transit system. The facts of movement, however, cannot force home the impact of these disparities as much as accounts of experiences such as those of twenty-six-year-old Kyle, a Latina mother of two, during her average workday. In order to work at a drug prevention program, she has to be at the bus stop at 6:00 A.M. with her children, aged fourteen and five, respectively. It takes two buses to get to one school and another two buses to get to her babysitter's house. Another thirty minutes and she is at work, three hours and six buses later. Stories like this are played out daily across the Los Angeles metro region.

Sixth - *When and how does it stop?* Or to put it another way - what kind of *friction* does the mobility experience? There is no perpetual motion machine and, despite the wilder prophecies of Virilio and others, things do stop. Spatial scientists famously formulated the notion of the “friction of distance” as part of the development of gravity models (Cliff, Martin, and Ord, 1974). Here it is the distance between two or more points that provides its own friction. But in a world of immediacy that is rarely flat and isotropic and where connectivity has become the most “relevant variable in assessing accessibility”,

forms of friction are more particular and varied. As with the question of reasons for mobility (motive force) we need to pay attention to the process of stopping. Is stopping a choice or is it forced?

Graham and Marvin, in their consideration of a city of flows draw on the work of Castells and Ezachieli to point out that the new points of friction are not the city walls but newly strengthened local boundaries: “global interconnections between highly valued spaces, via extremely capable infrastructure networks, are being combined with strengthening investment in security, access control, gates, walls, CCTV and the paradoxical reinforcement of local boundaries to movement and interaction within the city” (Graham and Marvin, 2001, 206). One of the effects of tunneling is to produce new enclaves of immobility with the city (Turner, 2007). Social and cultural kinetics means reconsidering borders. Borders, which once marked the edge of clearly defined territories are not popping up everywhere (Rumford, 2006). Airports are clearly borders in vertical space.

Often certain kinds of people, possibly those with suspicious rhythms, are frequently stopped at national borders. Sometimes for hours, sometimes only to be sent back. Black people in major cities across the west are still far more likely to be stopped by police due to racial profiling and the mythical crime of “driving while black” (Harris, 1997). In post 9/11 London people of middle-eastern appearance are increasingly stopped by the police on suspicion of activities associated with terrorism. In the most extreme case, in July 2005 Jean-Charles de Menezes, a Brazilian man mistaken for a middle-eastern terrorist, was shot in the head seven times to stop him from moving on a London underground train. Racial profiling also appears to take place in airports in western

nations where non-white people are frequently stopped and searched in customs or before boarding a flight. Those “high up”, meanwhile can stop and enjoy the scenery while others work at frantic pace around them. Friction is variably distributed in space and is an important component of mobility studies.

So here then we have six facets of mobility, each with a politics. The starting point, speed, rhythm, routing, experience and friction. Each is important in the creation of a modern mobile world, Each is linked to particular kinds of mobile subject identities (tourists, jet-setters, refugees, illegal immigrants, migrant labourers, academics) and mobile practices from walking to flying.

### **Constellations of Mobility**

So far I have outlined the importance of movement, meaning and practice to the study of mobility. I have shown how each of these has a politics to it. I have also suggested six facets of mobility that can serve to differentiate people and things into hierarchies of mobility. Returning to Bryson’s suggestive notion of “social kinetics” I would argue that each of these needs to be taken into account to provide accounts of dominant “senses of movement” at any given time. In the following section then I develop a notion of *Constellations of Mobility* as a way of accounting for historical senses of movement that is attentive to movement, meaning and practice and the ways in which these are interrelated.

A feudal sense of movement was characterized by carefully controlled physical movement where the monopoly on the definition of legitimate movement rested with

those at the top of a carefully controlled great chain of being. The vast majority of people had their movement controlled by the lords and the aristocracy. For the most part mobility was regulated at the local level. Yet still mobile subject positions existed outside of this chain of command ñ the minstrel, the vagabond, the pilgrim. Within this Constallation of Mobility we can identify particular practices of mobility, meanings for mobility and patterns of movement. In addition there are characteristic spaces of mobility and modes of control and regulation (Groebner, 2007). This was the era of frankpledge and of branding. As feudalism began to break down a larger class of mobile masterless men arose who threatened to undo the local control of mobility. New subjects, new knowledges, representations and discourses and new practices of mobility combined. The almshouse, the prison and the workcamp became spaces of regulation for mobility. By the Nineteenth Century in Europe the definition and control of legitimate movement had passed to the nation-state, the passport was on the horizon, national borders were fixed and enforced (Torpey, 2000). New forms of transport allowed movement over previously unthinkable scales in short periods of time. Narratives of mobility-as-liberty and mobility-as-progress accompanied notions of circulatory movement as healthy and moral (Sennett, 1994). By the Twentieth Century mobility was right at the heart of what it is to be modern. Modern man, and increasingly modern woman, were mobile. New spaces of mobility from the boulevard to the railway station (the spaces of Benjamin's Arcades Project (Benjamin, 1999)) became iconic for modernity. New subject positions such as tourist, citizen, globe-trotter and hobo came into being.

So what of now? We too have our sense of movement. Railways stations have been replaced by the airport - the site from which much cultural theory is written



(Hetherington, 2002). Our mobility is increasingly regulated and legitimized by authorities beyond the nation-state. The United Nations, international logistics organizations, transnational corporations, and post-national bodies such as the European Union create new stories for mobility, new spaces for mobility and new kinds of subject identities. European citizens, global terrorists, the kinetic elite. Biometrics are beginning to supplement and then replace the passport as keys to our mobile identities.

Broadly speaking, then, the scale of regulation for mobility has moved in the past 500 years or so from the local to the global. While mobility of the poor was always a problem for those high up it was a more local problem in feudal Europe where wandering vagabonds were regulated by the local parish through a system known as frankpledge (Dodgshon, 1987). By the eighteenth century mobility was beginning to become a national responsibility, Passports were just around the corner and poor people moved over greater distances and more frequently. By the end of the nineteenth century the nation state had a monopoly on the means of legitimate movement and national borders, for the first time became key points of friction in the movement of people (Torpey, 2000). By World War Two passports had become commonplace and nations were co-operating in identifying and regulating moving bodies. In each case it was indeed bodies that proved to be the key element even as the scale of mobility expanded and speeded up. While feudal vagabonds had their bodies branded like cattle, later travellers had to provide a photograph and personal details including “distinguishing marks” for the new passes and passports that were being developed (Groebner, 2007). Now we are in a new phase of mobility regulation where the means of legitimate movement is increasingly in the hands of corporations and trans-national institutions. The United Nations and the

European Union, for instance, have defined what counts and what does not account as appropriate movement. The Western Hemisphere Travel Initiative is seeking to regulate movement between the United States, Canada, Mexico and the Caribbean in ever more sophisticated ways (Gilbert, 2007; Sparke, 2006). Increasingly national interests are combined with so called pervasive commerce as innovative forms of identification based on a hybrid of biometrics and mobile technology are developed (Fuller, 2004).

One of the latest developments in mobile identification technology is the Rfid (Radio Frequency Identification) chip. These chips have been attached to objects of commerce since the 1980s. The Rfid chip contains a transponder that can emit a very low power signal that is readable by devices that are looking for them. The chip can include a large amount of data about the thing it is attached to. Rfid chip have the advantage over barcodes of being readable on the move, through paint, and other things that might obscure it, and at a distance. It is, in other words, designed for tracking on the move. Unlike a barcode it does not have to be stationary to be scanned. And Rfid technology is being used on people. As with most kinds of contemporary mobility regulation the testing ground seems to be airports. In Manchester airport a trial has just been conducted in which 50,000 passengers were tracked through the terminal using Rfid tags attached to boarding passes. The airport authorities have requested that this be implemented permanently. Washington State together with the Department of Homeland Security has recently conducted a trail involving Rfid tags on state driving-licenses allowing the users to travel between the states participating in the Western Hemisphere Travel Initiative. These tags can include much more information than is normally found on a driver's- license and can, of course, be tracked remotely.

It is experiments such as these that have led some to predict the development of a global network of RFID receivers placed in key mobility nodes such as airports, seaports, highways, distribution centers, and warehouses, all of which are constantly reading, processing, and evaluating people's behaviors and purchases.

Information gathering and regulation such as this is starkly different from the mobility constellations of earlier periods. Regulation of mobility, to use Paul Virilio's term, is increasingly dromological. Dromology is the regulation of differing capacities to move. It concerns the power to stop and put into motion, to incarcerate and accelerate objects and people (Virilio, 2006). Virilio and others argue that previous architectural understandings of space-time regulation are increasingly redundant in the face of a new informational and computational landscape in which the mobility of people and things is tightly integrated with an infrastructure of software that is able to provide a motive force or increase friction at the touch of a button (Thrift and French, 2002; Dodge and Kitchin, 2004). The model for this new mode of regulation is logistics. The spaces from which this mobility is produced are frequently the spatial arrangement of the database and spreadsheet.

## **Conclusion**

What I have suggested here is an approach to mobility that considers mobility as an entanglement of movement, meaning and power. This involves thinking through and connecting movement, meaning and practice across scales. Mobility like, place, space and territory, involves a politics of hierarchy, of inclusion and exclusion. Indeed, following Bauman, I would argue that mobility may well be the key difference producing

machine of our age. I have also suggested the existence of historical and geographical constellations of mobility - more or less structured senses of movement that connect movement with narratives and practices.

Returning to the notion of a “new mobilities paradigm” I have revealed two caveats it is necessary to take on board in contemporary mobility research. One is an awareness of the mobilities of the past. Much that passes for mobilities research has a flavour of technophilia and the love of the new about it. In this formulation it is *now* that is mobile while the past was more fixed. We only have to consider the words of the 1909 Futurist Manifesto to see how this is a recycled notion. Consider point 8: “We are on the extreme promontory of the centuries! What is the use of looking behind at the moment when we must open the mysterious shutters of the impossible? Time and Space died yesterday. We are already living in the absolute, since we have already created eternal, omnipresent speed” (Marinetti, 1909). Here too the present and the future were about the mobile and the dynamic while the past was about stasis and stagnation. Yet their dynamism now seems quaintly nostalgic. Pictures of suburban trains entering Paris hardly seem like images of “eternal omnipresent speed”. Nothing seems more archaic than the futures of the past.

Taking an even longer backward look into history consider the role of the medieval vagrant in the constitution of contemporary mobilities. It was the presence of these masterless men that prompted the invention of all kinds of new forms of surveillance and identity documentation that form the basis for what is going on now in airports and at national borders (Groebner, 2007; Bauman, 1987). We cannot understand new mobilities, then, without understanding old mobilities. Thinking of mobilities in

terms of constellations of movements, meanings and practices helps us avoid historical amnesia when thinking about and with mobility. Reflecting Raymond Williams notions of emerging, dominant and residual traditions which work to shape cultural formations (Williams, 1977) we can think of constellations of mobility as emerging, dominant and residual. Elements of the past exist in the present just as elements of the future surround us.

In addition to being aware of continuities with the past that make contemporary mobilities intelligible we need to keep notions of fixity, stasis and immobility in mind. As proponents of the mobility turn have shown, mobilities need moorings (Hammam, Sheller and Urry, 2006). Even the seemingly frictionless world of global capital needs relative “permanences” in order to reproduce itself (Harvey, 1996). So while there is a temptation to think of a mobile world as something which replaces a world of fixities (Virilio’s dromology is an example of this), we need to constantly consider the politics of obduracy, fixity and friction. The dromological exists alongside the topological and the topographical.

## **References**

- Abler R, Adams J, and Gould P, 1971 *Spatial Organization: The Geographer's View of the World* (Prentice Hall, Englewood Cliffs, NJ.)
- Adey P, 2004a, "Secured and Sorted Mobilities: Examples from the Airport", *Surveillance and Society* **1** (4) 500-519
- , 2004b, "Surveillance at the Airport: Surveilling Mobility/Mobilising Surveillance", *Environment and Planning A* **36** (8) 1365-1380

- Bærenholdt J O, and Simonsen K, 2004 *Space Odysseys : Spatiality and Social Relations in the 21st Century* (Ashgate, Aldershot, Hants, England ; Burlington, VT)
- Balibar E, 2004 *We, the People of Europe? : Reflections on Transnational Citizenship* (Princeton University Press, Princeton, N.J.)
- Bauman Z, 1987 *Legislators and Interpreters* (Polity Press, Oxford)
- , 1998 *Globalization : The Human Consequences* (Columbia University Press, New York)
- Beckmann J, 2001, "Automobility – a Social Problem and Theoretical Concept", *Environment and Planning D: Society and Space* **19** 593-607
- Benjamin W, 1999 *The Arcades Project* (Belknap Press of Harvard University Press, Cambridge, Mass.)
- Berman M, 1988 *All That Is Solid Melts into Air: The Experience of Modernity* (Penguin, Harmondsworth)
- Blomley N, 1994a *Law, Space and the Geographies of Power* (Guilford, New York)
- , 1994b, "Mobility, Empowerment and the Rights Revolution", *Political Geography* **13** 407-422
- Blunt A, 2007, "Cultural Geographies of Migration: Mobility, Transnationality and Diaspora", *Progress in Human Geography* **31** (5) 684-694
- Bryson N, 1997, "Cultural Studies and Dance History", in *Meaning in Motion: New Cultural Studies of Dance*, ed J Desmond. (Duke University Press, Durham NC)
- Bullard R D, and Johnson G S, 1997 *Just Transportation : Dismantling Race and Class Barriers to Mobility* (New Society Publishers, Gabriola Island, BC ; Stony Creek, CT)

- Cliff A D, Martin R L, and Ord J K, 1974, "Evaluating the Friction of Distance Parameter in Gravity Models", *Regional Studies* **8** (3-4) 281-186
- Cresswell T, 2001, "The Production of Mobilities", *New Formations* **43** (Spring) 3-25
- , 2006 *On the Move : Mobility in the Modern Western World* (Routledge, New York)
- Cresswell T, and Merriman P, eds 2008, *Geographies of Mobility: Practices, Spaces, Subjects* (Ashgate, London)
- de Certeau M, 1984 *The Practice of Everyday Life* (University of California Press, Berkeley, CA.)
- Deleuze G, and Guattari F, 1987 *A Thousand Plateaus : Capitalism and Schizophrenia* (University of Minnesota Press, Minneapolis)
- Dodge M, and Kitchin R, 2004, "Flying through Code/Space: The Real Virtuality of Air Travel", *Environment and Planning A* **36** 195-211
- Dodgshon R A, 1987 *The European Past : Social Evolution and Spatial Order* (Macmillan Education, Basingstoke, Hampshire)
- Eliasson J, and Mattson L-G, 2005, "It Is Time to Use Activity-Based Urban Transport Models? A Discussion of Planning Needs and Modelling Possibilities", *Annals of Regional Science* **39** (4) 767-789
- Forer P, 1978, "A Place for Plastic Space?" *Progress in Human Geography* **2** 230-267
- Fuller G, 2004, "Perfect Match: Biometrics and Body Patterning in a Networked World", *Fibreculture Journal* **1**
- Gilbert E, 2007, "Leaky Borders and Solid Citizens: Governing Security, Prosperity and Quality of Life in a North American Partnership", *Antipode* **39** (1) 77-98

- Graham S, and Marvin S, 2001 *Splintering Urbanism Networked Infrastructures, Technological Mobilities and the Urban Condition* (Routledge, London ; New York)
- Groebner V, 2007 *Who Are You? : Identification, Deception, and Surveillance in Early Modern Europe* (Zone Books, Brooklyn, NY)
- Hannam K, Sheller M, and Urry J, 2006, "Mobilities, Immobilities and Moorings", *Mobilities* **1** (1) 1-22
- Hanson S, and Pratt G J, 1995 *Gender, Work, and Space* (Routledge, London ; New York)
- Harris D A, 1997, "Driving While Black and All Other Traffic Offenses: The Supreme Court and Pretextual Stops." *Journal of Criminal Law & Criminology* **87** 544-582
- Harvey D, 1996, *Justice, Nature and the Politics of Difference* (Blackwell, Oxford)
- Hetherington K, 2002, "Whither the World? - Presence, Absence and the Globe", in *Mobilizing Place, Placing Mobility: The Politics of Representation in a Globalized World*, eds T Cresswell and G Verstraete. (Rodopi, Amsterdam)
- Hoyle B S, Knowles R D, 1998 *Modern Transport Geography* (Wiley, Chichester ; New York)
- Ingold T, 2004, "Culture on the Ground: The World Percieved through the Feet", *Journal of Material Culture* **9** (3) 315-340
- Kaufmann V, 2002 *Re-Thinking Mobility : Contemporary Sociology* (Ashgate, Aldershot)
- Kern S, 1983 *The Culture of Time and Space 1880-1918* (Harvard University Press, Cambridge, Mass.)



- Kuhn T S, 1996 *The Structure of Scientific Revolutions* (University of Chicago Press, Chicago, IL)
- Latour B, 2005 *Reassembling the Social : An Introduction to Actor-Network-Theory* (Oxford University Press, Oxford ; New York)
- Lefebvre H, 2004 *Rhythmanalysis : Space, Time, and Everyday Life* (Continuum, London ; New York)
- Marinetti F T. Manifesto of Futurism 1909 [cited. Available from <http://www.cscs.umich.edu/~crshalizi/T4PM/futurist-manifesto.html>].
- Mels T, 2004 *Reanimating Places : A Geography of Rhythms* (Ashgate, Aldershot, Hants, England ; Burlington, VT, USA)
- Merriman P, 2007 *Driving Spaces : A Cultural-Historical Geography of England's M1 Motorway* (Blackwell, Oxford, UK ; Malden, MA, USA)
- Oliver M, 1996 *Understanding Disability: From Theory to Practice* (Macmillan, Basingstoke)
- Park R, and Burgess E, 1925 *The City: Suggestions for Investigation of Human Behavior in the Urban Environment* (University of Chicago Press, Chicago)
- Pickup L, 1988, "Hard to Get Around: A Study of Women's Travel Mobility", in *Women in Cities: Gender and the Urban Environment*, eds J Little, L Peake and P Richardson. (New York University Press, New York)
- Price B, 1989, "Frank and Lillian Gilbreth and the Manufacture and Marketing of Motion Study, 1908-1924", *Business and Economic History* **18** 88-98
- Rumford C, 2006, "Theorising Borders", *European Journal of Social Theory* **9** (2) 155-169

- Sassen S, 1999 *Guests and Aliens* (New Press : Distributed by W.W. Norton, New York)
- Sauer C O, 1952 *Agricultural Origins and Dispersals* (American Geographical Society, New York,)
- Seamon D, 1979 *A Geography of the Lifeworld : Movement, Rest, and Encounter* (St. Martin's Press, New York)
- Sennett R, 1994 *Flesh and Stone : The Body and the City in Western Civilization* (W.W. Norton, New York)
- Sheller M, and Urry J, 2006a *Mobile Technologies of the City* (Routledge, New York)
- , 2006b, "The New Mobilities Paradigm", *Environment and Planning A* **38** (2) 207-226
- Simmel G, 1950 *The Sociology of Georg Simmel* (Free Press, Glencoe, Ill.,)
- Solnit R, 2000 *Wanderlust: A History of Walking* (Viking, New York)
- Sparke M, 2006, "A Neoliberal Nexus: Economy, Security and the Biopolitics of Citizenship on the Border", *Political Geography* **25** (2) 151-180
- Tester K, ed 1994, *The Flaneur* (Routledge, London)
- Thrift N, 1994, "Inhuman Geographies: Landscapes of Speed, Light and Power", in *Writing the Rural: Five Cultural Geographies*, ed P Cloke. (Paul Chapman, London)
- , 2004, "Driving in the City", *Theory, Culture and Society* **21** (4-5) 41-59
- Thrift N J, and French S, 2002, "The Automatic Production of Space", *Transactions of the Institute of British Geographers* **27** 309-335
- Tomlinson J, 2007 *The Culture of Speed : The Coming of Immediacy* (Sage Publications, Los Angeles, CA)

- Torpey J C, 2000 *The Invention of the Passport : Surveillance, Citizenship, and the State* (Cambridge University Press, Cambridge [England] ; New York)
- Tuitt P, 1996 *False Images : Law's Construction of the Refugee* (Pluto Press, London)
- Turner B S, 2007, "The Enclave Society: Towards a Sociology of Immobility", *European Journal of Social Theory* **10** (2) 287-304
- Urry J, 2000 *Sociology Beyond Societies : Mobilities for the Twenty-First Century* (Routledge, London ; New York)
- , 2004, "The System of Automobility", *Theory, Culture and Society* **21** (4-5) 25-39
- Uteng T P, and Cresswell T, eds 2008, *Gendered Mobilities* (Ashgate, London)
- Verstraete G, 2001, "Technological Frontiers and the Politics of Mobility in the European Union", *New Formations* **43** (Spring) 26-43
- Virilio P, 1986 *Speed and Politics : An Essay on Dromology* (Columbia University, New York, NY, USA)
- , 2006 *Speed and Politics* (Semiotext(e), Los Angeles)
- White A, 2002, "Geographies of Asylum, Legal Knowledge and Legal Practices", *Political Geography* **21** 1055-1073
- Williams R, 1977, *Marxism and Literature* (Oxford University Press, Oxford)
- Wylie J, 2005, "A Single Day's Walking: Narrating Self and Landscape on the South-West Coast Path", *Transactions of the Institute of British Geographers* **30** (2) 234-247
- Yanarella E J, and Reid H G, 1996, "From "Trained Gorilla" To "Humanware": Repoliticizing the Body-Machine Complex between Fordism and Post-Fordism",

in *The Social and Political Body*, eds T Schatzki and W Natter. (Guilford, New York)