Inhabiting the Car

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Unesco International Conference, Universidade Candido Mendes, Rio de Janeiro, May 2000

In this paper I consider just how neglected the car has been in contemporary social analyses. Yet it is the most important example of a global technology. I try to rectify this neglect by considering some of the ways in which we can think of people inhabiting the car and more generally inhabiting the system of automobility. The car combines exceptional flexibility and coercion. I consider the nature of time that automobility both presumes and generalises. I analyse just how people inhabit the car as a place of dwelling, suggesting that there have been three characteristic modes of dwelling within the car, from 'inhabiting-the-road', to 'inhabiting-the-car', to 'inhabiting the intelligent car'. I consider whether there are some emerging convergent technologies that might enable a new kind of automobility to emerge that dispenses with the old-fashioned steel-and-petroleum Fordist car of the last century.

'Today, we experience an ease of motion unknown to any prior urban civilization…we take unrestricted motion of the individual to be an absolute right. The private motorcar is the logical instrument for exercising that right, and the effect on public space, especially the space of the urban street, is that the space becomes meaningless or even maddening unless it can be subordinated to free movement' *Richard Sennett* (1977: 14).

Introduction

The car is a particularly good illustration of a putative globalisation. One billion cars have been manufactured during this century. There are currently over 500m cars roaming the world, a figure that is expected to double by 2015 (Shove 1998). And world car travel is predicted to triple between 1990 and 2050 (Hawkin, Lovins, Lovins 1999). However, the car is rarely discussed in the 'globalisation literature', although its specific character of domination is as global as the cinema, television and the computer which are normally viewed as constitutive of global culture. Indeed contemporary 'global cities', and cities in general, remain primarily rooted in and defined by automobility, as much as they are by these other technologies.

However, much social analysis has been remarkably static and concerned itself little with the various mobilities that move into, across and through cities and countrysides (although see Lynd and Lynd 1937; on sociology's neglect of the automobile, see Hawkins 1986). Where such mobilities have been taken into account, it is to lament the effects of the car on the city or to argue that a culture of speed replaces older cultures of the 'urban' (Virilio 1997). Social analysts have mainly concentrated upon the mobility of walking and especially flânerie, while the movement, noise, smell, visual intrusion and environmental hazards of the car are seen as largely irrelevant to deciphering the nature of contemporary life.

But I suggest below that automobility is as constitutive of the modern as are the more general processes of urbanisation (as Corbusier understood in the 1920s). Such an automobility comprises six components that in their *combination* generates the 'specific character of domination' that it exercises across the globe (Freund 1993, Whitelegg 1997). Automobility is:

- the quintessential *manufactured object* produced by the leading industrial sectors and the iconic firms within twentieth century capitalism (Ford, GM, Rolls-Royce, Mercedes, Toyota, VW and so on); the industry from which Fordism and Post-Fordism have emerged

- the major item of *individual consumption* after housing which provides status to its owner/user through its sign-values (such as speed, home, safety, sexual desire, career success, freedom, family, masculinity, genetic breeding); is easily anthropomorphised by being given names, having rebellious features, seen to age and so on; and disproportionately preoccupies criminal justice systems

- an extraordinarily powerful *machinic complex* constituted through its technical and social interlinkages with other industries, car parts and accessories; petrol refining and distribution; road-building and maintenance; hotels, roadside service areas and motels; car sales and repair workshops; suburban house building; retailing and leisure complexes; advertising and marketing; urban design and planning

- the predominant global form of 'quasi-private' *mobility* that subordinates other 'public' mobilities of walking, cycling, travelling by rail and so on; and it reorganises how people negotiate the opportunities for, and constraints upon, work, family life, leisure and pleasure

- the dominant *culture* that sustains major discourses of what constitutes the good life, what is necessary for an appropriate citizenship of mobility and which provides potent literary and artistic images and symbols (ranging from E. M. Forster to Scott Fitzgerald to John Steinbeck to Daphne du Maurier to J. G. Ballard: see Bachmair 1991; Graves-Brown 1997; Eyerman and Löfgren 1995; Pearce 1999).

- the single most important cause of *environmental resource-use* resulting from the range and scale of material, space and power used in the manufacture of cars, roads and car-only environments, and in coping with the material, air quality, medical, social, ozone, visual, aural, spatial and temporal pollution of a more or less global automobility (see Whitelegg 1997; SceneSusTech 1998)

I use 'automobility' here to capture a double-sense. On the one hand, 'auto' refers reflexively to the humanist self, such as the meaning of 'auto' in autobiography or autoerotic. On the other hand, 'auto' refers to objects or machines that possess a capacity for movement, as

expressed by automatic, automaton and especially automobile. This double resonance of 'auto' is suggestive of the way in which the car-driver is a 'hybrid' assemblage, not simply of autonomous humans but simultaneously of machines, roads, buildings, signs and entire cultures of mobility (Haraway 1991; Thrift 1996: 282-84). In the following I outline an analysis of 'auto' mobility that explores this double resonance, of autonomous humans *and* of autonomous machines only able to roam in certain time-space scapes. I will consider how automobility is a complex amalgam of interlocking machines, social practices and especially ways of inhabiting not a stationary home but a mobile, semi-privatised and hugely dangerous auto-mobile capsule. In the next section I consider how automobility makes instantaneous time and the negotiation of extensive space central to how such social life is configured, as people dwell in, and socially interact through, movement within their cars.

The car and time-space

Raymond Williams' novels interestingly bring out how twentieth century social life exists through interconnecting time-space paths linking place with place. He elaborates how many socialities of civil society are sustained through technologies of movement which, literally and imaginatively, connect peoples, and especially families, over significant, complexly structured, heterogeneous distances. In *Border Country*, Williams is 'fascinated by the networks men and women set up, the trails and territorial structures they make as they move across a region, and the ways these interact or interfere with each other' (Pinkney 1991: 49; Williams 1988). Williams mainly considers the connections made possible by the railway. But these are now less significant than those of automobility since as Williams argues: 'What was central now was the fact of traffic' (quoted Pinkney 1991: 55).

Inhabiting the car permits multiple socialities, of family life, community, leisure, the pleasures of movement and so on, which are interwoven through complex jugglings of time and space that car journeys both allow but also necessitate. These jugglings result from two interdependent features of automobility: that the car is immensely flexible *and* wholly coercive. I elaborate some of the temporal and spatial implications of this simultaneous flexibility and coercion for social life.

Automobility is in some respects a source of freedom, the 'freedom of the road'. Its flexibility enables the car-driver to travel at speed, at any time in any direction along the complex road systems of western societies that link together most houses, workplaces and leisure sites. Cars therefore extend where people can go to and hence what as humans they are literally able to do. Much of what many people now think of as 'social life' could not be undertaken without the flexibilities of the car and its availability 24 hours a day. It is possible to leave late by car, to miss connections, to travel in a relatively time-less fashion. People find pleasure in travelling when they want to, along routes that they choose, finding new places unexpectedly, stopping for relatively open-ended periods of time, and moving on when they desire. They are what Shove terms another of the 'convenience devices' of contemporary society, devices that make complex, harried patterns of social life just about possible, at least of course for those with cars (1998; and see Pearce 1999).

But at the same time this flexibility and these rights are themselves necessitated by automobility. The 'structure of auto space' (Freund 1993) forces people to orchestrate in complex and heterogeneous ways their mobilities and socialities across very significant distances. The urban environment, built during the latter half of the twentieth century for the convenience of the car, has 'unbundled' territorialities of home, work, business, and leisure that had historically been closely integrated and fragmented social practices that occurred in shared public spaces (Sassen 1996; SceneSusTech 1998). Automobility divides workplaces from homes, so producing lengthy commutes into and across the city. It splits homes and business districts, undermining local retail outlets to which one might have walked or cycled, thereby eroding town-centres, non-car pathways, and public spaces. It also separates homes and various kinds of leisure sites, which are often only available by motorised transport. Members of families are split up since they will live in distant places necessarily involving complex travel to meet up even intermittently. People inhabit congestion, jams, temporal uncertainties and health-threatening city environments, as a consequence of being encapsulated in a privatised, cocooned, moving capsule. Automobility simultaneously

disables those who are not car-drivers (children, the sight impaired, those without cars) by making their everyday habitats dangerously non-navigable (Kunstler 1994).

Automobility thus coerces people into an intense flexibility. It forces people to juggle tiny fragments of time so as to deal with the temporal and spatial constraints that it itself generates. Automobility is a Frankenstein-created monster, extending the individual into realms of freedom and flexibility whereby inhabiting the car can be positively viewed, but also constraining car 'users' to live their lives in spatially-stretched and time-compressed ways. The car, one might suggest, is Weber's 'iron cage' of modernity, motorised, moving and privatised.

Automobility thus develops 'instantaneous' time to be managed in highly complex, heterogeneous and uncertain ways. Automobility involves an individualistic timetabling of many instants or fragments of time. The car-driver thus operates in instantaneous time that contrasts with the official timetabling of mobility that accompanied the railways in the mid-nineteenth century (Urry 2000). This was modernist clock-time based upon the public timetable or what Bauman terms 'gardening' rather than 'gamekeeping' (1987). As a car-driver wrote in 1902: 'Traveling means utmost free activity, the train however condemns you to passivity…the railway squeezes you into a timetable' (cited Morse 1998: 117). The objective clock-time of the modernist railway timetable is replaced by personalised, subjective temporalities, as people live their lives in and through their car(s) (if they have one). This helps to produce a reflexive monitoring of the self. People try to sustain 'coherent, yet continuously revised, biographical narratives … in the context of multiple choices filtered through abstract systems' such as automobility (Giddens 1991: 6). Automobility coerces people to juggle fragments of time in order to assemble complex, fragile and contingent patterns of social life, patterns that constitute self-created narratives of the reflexive self.

The shortage of time resulting from the extensive distances that increasingly 'have' to be travelled means that the car remains the main means of highly flexibilised mobility. Also other forms of mobility in the city are by comparison with the car relatively inflexible and inconvenient, judged that is by criteria that automobility itself generates and generalises. In particular, inhabiting the car enables *seamless* journeys from home-away-home. It does away with the stationary pauses necessitated by 'stations', apart from the occasional stop at the gas station. And this is what the contemporary traveller has come to expect.

The seamlessness of the car journey makes other modes of travel inflexible and fragmented. So-called public transport rarely provides that kind of seamlessness (except for first class air travellers with a limousine service to and from the airport). There are many gaps between the various mechanised means of public transport: walking from one's house to the bus stop, waiting at the bus stop, walking though the bus station to the train station, waiting on the station platform, getting off the train and waiting for a taxi, walking though a strange street to the office and so on until one returns home. These 'structural holes' in semi-public space are sources of inconvenience, danger and uncertainty. And this is especially true for women, older people, those who may be subject to racist attacks, the disabled and so on (see SceneSusTech 1998). There are gaps for the car-driver involving semi-public spaces, such as entering a multi-storey car park or walking though strange streets to return to one's car. However, they are less endemic than for other kinds of travel, although they illustrate how all forms of mobility are punctuated by pauses – pauses to refuel, repair, park overnight, clean the machine and/or its 'driver'.

As personal times are desynchronised from each other, so spatial movements are increasingly synchronised to the rhythm of the road. The loose interactions and mobilities of pedestrians give way to the tightly controlled mobility of machines, that (hopefully!) keep on one side of the road, within lanes, within certain speeds, following highly complex sign-systems and so on. Driving requires 'publics' based on trust, in which mutual strangers are able to follow such shared rules, communicate through common sets of visual and aural signals, and interact even without eye-contact in a kind of default space or non-place available to all 'citizens of the road' (see Lynch 1993).

Automobility also dominates how non-car-users inhabit public spaces. Car-drivers are excused from normal etiquette and face-to-face interactions with all those others who are

inhabiting the road. Car-travel interrupts the taskscapes of others (pedestrians, children going to school, postmen, garbage collectors, farmers, animals and so on), whose daily routines are obstacles to the high-speed traffic cutting mercilessly through slower-moving pathways and dwellings. Junctions, roundabouts, and ramps present moments of carefully scripted inter-car-action during which non-car users of the road constitute obstacles to the hybrid car-drivers intent on returning to their normal cruising speed deemed necessary in order to complete the day's complex tasks in time. To inhabit the roads of the west is to enter of world of anonymised machines, ghostly presences moving too fast to know directly or especially to see through the eye.

Simmel indeed makes some relevant points here. *Contra* much contemporary social theory he considers that the eye is a unique 'sociological achievement' (cited Frisby and Featherstone 1997: 111). Looking at one another is what effects the connections and interactions of individuals. Simmel terms this the most direct and 'purest' interaction. It is the look between people (what we now call 'eye-contact') which produces extraordinary moments of intimacy since: '[o]ne cannot take through the eye without at the same time giving'; this produces the 'most complete reciprocity' of person to person, face to face (Frisby and Featherstone 1997: 112). The look is returned, and this results from the expressive meaning of the face. What we see in the person is the lasting part of them, 'the history of their life and ... the timeless dowry of nature' (Frisby and Featherstone 1997: 115). He further argues, following notions of the possessive gaze, that the visual sense enables people to take possession, not only of other people, but also of diverse objects and environments often from a distance (Frisby and Featherstone 1997: 116). The visual sense enables the world of both people and objects to be controlled from afar, combining detachment and mastery. It is by seeking distance that a proper 'view' is gained, abstracted from the hustle and bustle of everyday experience.

Automobility precludes both of these achievements of the eye. Especially for the non-car user roads are simply full of moving, dangerous iron cages. There is no reciprocity of the eye and no look is returned from the 'ghost in the machine'. Communities of people become anonymised flows of faceless ghostly machines. The iron cages conceal the expressiveness of the face and a road full of vehicles can never be possessed. There is no distance and mastery over the iron cage; rather those living on the street are bombarded by their hustle and bustle and especially by the noise, fumes, tastes and relentless movement of the car that can never be mastered or possessed (see Urry 2000: chap 4 on the senses). To inhabit a road full of cars is to be in an environment where the visual sense is always overwhelmed by those other senses.

More generally, Freund argues that 'Modernist urban landscapes were built to facilitate automobility and to discourage other forms of human movement… [Movement between] private worlds is through dead public spaces by car' (1993: 119). Large areas of the globe now consist of car-only environments - the quintessential non-places of super-modernity (Augé 1995). About one-quarter of the land in London and nearly one-half of that in LA is devoted to car-only environments. And they then exert an awesome spatial and temporal dominance over surrounding environments, transforming what can be seen, heard, smelt and even tasted (the spatial and temporal range of which varies for each of the senses). Such car-environments or non-places are neither urban nor rural, local nor cosmopolitan. They are sites of pure mobility within which car-drivers are insulated as they 'dwell-within-the-car'. They represent the victory of liquidity over the 'urban'.

One such non-place is the motel (immortalised in the UK by the TV soap called *Crossroads*). Clifford notes that the 'motel has no real lobby, and it's tied into a highway network - a relay or node rather than a site of encounter between coherent cultural subjects' (as would, he implies, be found in a hotel; 1997: 32). Motels 'memorialize only movement, speed, and perpetual circulation' since they 'can never be a true *place*' and one motel is only distinguished from another in 'a high-speed, *empiricist* flash' (Morris 1988: 3, 5). The motel, like the motorway service stations, represents neither arrival nor departure but the 'pause', consecrated to circulation and movement and demolishing particular senses of place and locale. This 'sense of sameness and placelessness' is accompanied by a 'social organization of space that helps to further auto-dependence and to mask any realistic alternatives to

automobility' (Freund 1993: 11). Morse describes the freeway not as a place but as a vector, as direction, as 'in-betweens' where magnitude is measured in minutes rather than miles (1998).

Dwelling in the car

I have considered how, as a moving private-in-public space, automobility involving punctuated movement 'on the road' and produces new temporalities and spatialities. In this section I consider in more detail just what kind of place the car is – what is involved in inhabiting what Morse calls an 'iron bubble' (1998)?

First, domesticity is reproduced through social relations such as the 'back-seat driver' or the common dependence upon a partner for navigation and map reading. Moreover, a variety of services have become available without leaving the car, as the 'drive-in' becomes a feature of everyday life. Since the 1950s days of the drive-in movie and the drive-in 'automat', more recent car-dwellers in the US have been treated to the conveniences of drive-through banking, drive-through car washes, drive-through safari theme parks, and even drive-through beer distributors (not to mention drive-by shootings and drive-up mail delivery). Thus fragments of time are increasingly compressed into taskscapes that keep people inside their cars, while the 'coming together of private citizens in public space' is lost to a privatisation of the mechanised self moving through emptied non-places.

Further in each car the driver is strapped into a comfortable if constraining armchair and surrounded by micro-electronic informational sources, controls and sources of pleasure, what Williams calls the 'mobile privatisation' of the car (see Pinkney 1991: 55). The Ford brochure of 1949 declared that 'The 49 Ford is a living room on wheels' (Marsh and Collett 1986: 11; the VW camper is described as a 'Room with a View'). Pearce maintains that: 'nothing except the car provides us with quite the same uniquely privatized (or, indeed, "customised") psychological spatio-temporal vacuum' (1999: 4-5). Indeed the worse the roads outside the greater the pleasure, security and sense of dwellingness that is sought within the car.

Features such as automatic gearboxes, cruise control, and CD-changers 'free' drivers from direct manipulation of the machinery, while embedding them more deeply in its peculiar sociality. Protected by seatbelts, airbags, 'crumple zones,' 'roll bars' and 'bull bars,' car-dwellers boost their own safety while leaving others to fend for themselves in a 'nasty, brutish and short' world of millions of moving and crashing iron cages. As Adorno wrote as early as 1942: 'And which driver is not tempted, merely by the power of the engine, to wipe out the vermin of the street, pedestrians, children and cyclists?' (1972: 40; see Bull 2000).

The car is a room in which the senses are necessarily impoverished. Once in the car there is almost no kinesthetic movement from the driver. So although automobility is a system of mobility *par excellence* it necessitates the minimum of movement once one is strapped *into* the driving seat. Eyes have to be constantly on the look-out for danger, hands and feet are ready for the next manoeuvre, the body is gripped into a fixed position, lights and noises may indicate that the car-driver needs to make instantaneous adjustments, and so on. The other traffic constrains how each car is to be driven, its speed, direction, its lane and so on.

Dwelling at speed, car-drivers lose the ability to perceive local detail, to talk to strangers, to learn of local ways of life, to stop and sense each different place (see Freund 1993: 120-21). Sights, sounds, tastes, temperatures and smells get reduced to the two-dimensional view through the car windscreen and through the rear mirror, the sensing of the world through the screen being the dominant mode of contemporary dwelling (see Morse 1998). The environment beyond that windscreen is an alien other, kept at bay through the diverse privatising technologies incorporated within the car. These technologies ensure a consistent supply of information, a relatively protected environment, high quality sounds and increasingly sophisticated systems of monitoring. They enable the hybrid of the car-driver to negotiate conditions of intense riskiness on high-speed roads (roads are increasingly risky because of the reduced road-space now available to each car). And as cars have increasingly overwhelmed almost all environments, so everyone is coerced to experience such environments through the protective screen and to abandon streets and squares to these omnipotent metallic iron cages.

The driver's body is itself fragmented and disciplined to the machine, with eyes, ears, hands, and feet, all trained to respond instantaneously and consistently, while desires even to stretch, to change position, to doze or to look around being suppressed. The car becomes an extension of the driver's body, creating new subjectivities organised around the extraordinarily disciplined 'driving body' (see Freund 1993: 99; Hawkins 1986; Morse 1998). A Californian city planner declared as early as 1930 that 'it might be said that Southern Californians have added wheels to their anatomy' (cited Flink 1988: 143). The car can be thought of as an extension of the senses so that the car-driver can feel its very contours, shape and relationship to that beyond its metallic skin. As Ihde describes: 'The expert driver when parallel parking needs very little by way of visual clues to back himself into the small place – he "feels" the very extension of himself through the car as the car becomes a symbiotic extension of his own embodiedness' (1974: 272). An advert for the BMW 733i promised the 'integration of man and machine…an almost total oneness with the car' (quoted Hawkins 1986: 67).

The machinic hybridization of the car-driver extends into the deepest reaches of the psyche. A kind of libidinal economy has developed around the car, in which subjectivities get invested in the car as an enormously powerful and mobile object. There is a sexualization of the car itself as an extension of the driver's desires and fantasies. The car takes part in the ego-formation of the driver as competent, powerful, and masterful (as advertisers have shamelessly deployed). Various 'coming-of-age' rituals revolve around the car, with car-sex itself becoming an element of fantasy in everything from music videos to 'crash culture' (see Ballard 1995). The body of the car provides an extension of the human body, surrounding the fragile, soft and vulnerable human skin with a new steel skin, albeit one that can scratch, crumple and rupture once it encounters other cars in a crash. The car is both all-powerful and simultaneously feeds into people's deepest anxieties and frustrations, ranging from the fear of accident and death to the intense frustration of being stuck behind a slow vehicle while trying to save precious fragments of time. Within the private cocoon of glass and metal intense emotions are released in forms that would otherwise be socially unacceptable.

We might indeed re-conceptualise civil society as a civil society of quasi-objects, or 'car-drivers' and 'car-passengers'. It is not a civil society of separate human subjects who can be conceived of as autonomous from these all-conquering machines. Such a hybrid of the car-driver is in normal circumstances unremarkable as it reproduces the socio-technical order (Michael 1998). There is a careful, civilized control of the car machine deploying considerable technical and interactive skills. But in situations of what in the UK is known as 'road rage' another set of scripts are drawn upon, those of aggression, competition and speed. But these scripts of the other are always components of automobility that is polysemic, encouraging us to be both careful, considerate and civilised (the Volvo syndrome) *and* to enjoy speed, danger and excitement (the Top Gear syndrome [a BBC car programme]). There is multiple scription and hence different elements of the hybrid car-driver (Michael 1998: 133).

Specifically in the case of road rage: '…one actually needs to be more skilful, to push both body and machine into quantitatively greater alignment, than in the case where one is a responsible civilized driver…In order to exercise 'loss of social control', one needs to practice greater technological control' (Michael 1998: 133). Michael describes this as 'hyperhybridization' with the human being more or less immersed within the technology and vice versa. However, according to motoring organisations such a virulent hybrid should be purified by changing not the human-machine hybrid but the pathological 'road-raging' human (analogous to the presumed pathology of the 'drunk driver': Hawkins 1986: 70-1). What is not proposed by such organisations is that the hybrid should itself be transformed, such as by the fitting of long sharp spikes sticking out from the centre of every steering wheel pointing to the heart of each driver. Such a transformed hybrid would be unlikely to 'rage' or to be alcohol-impaired (see Adams 1995: 155)!

Finally, we might note that women appear to inhabit cars somewhat distinctly. In the inter-war period automobility was generally organised around a cosiness of family life both in Europe and the US (Taylor, J. 1994: chap 4). In the latter this was the period of massive suburbanization that was predicated upon low density family housing with a sizeable garden, many domestic production goods for the 'wife' to use, and a car to enable the 'husband' to

travel quite long distances to get to work. The automobilisation of family life not only brought the newest and most expensive car models first to male 'heads of families', while women had to settle for second hand models or smaller cars, but also led to the uneven gendering of time-space. While working, men became enmeshed in the stresses of daily commuter traffic into and out of urban centres, suburban 'housewives' had to juggle family time around multiple, often conflicting, schedules of mobility epitomised by 'the school run' and mom-as-chauffeur. Once family life is centred within the moving car, social responsibilities tend to push women, who now drive in very significant numbers, towards 'safer' cars and 'family' models while men often indulge in individualistic fantasies of fast sports car or the impractical 'classic car'. Cars were originally designed to suit the average male body and have only recently been designed to be adjustable to drivers of various heights and reaches. The distribution of company cars has also benefited men more than women, due to continuing horizontal and vertical segregation in the job market, which keeps most women out of positions with access to such 'perks'. However, actuarial statistics show that male drivers are more likely to externalise risks onto others through a much greater tendency to speeding and hence to maiming and killing others (see Meadows and Stradling 2000).

Different Inhabitings

I have so far talked rather generally about how we inhabit the car, with little acknowledgement of the enormous differences involved across different societies and across different periods (except that of gender). I want to suggest that there have been three characteristic modes of dwelling within the car, from 'inhabiting-the-road', to 'inhabiting-the-car', to 'inhabiting the intelligent car'. I will sketch some moments in these transitions drawing on British and American examples.

First then inhabiting the road. At the beginning of the last century cars were seen as speed machines. There was a preoccupation with the breaking of speed records, especially as these were recorded by increasingly precise watches. Life appeared to be accelerating as humans and machines combined in new and intricate 'machinic complexes', following the development of railway. The car was constituted as a speed machine to propel humans ever-faster (in fact rather rich and male humans). Many motorists described their experience of speed in mystical terms, as though this were an experience which expressed the inner forces of nature. The author Filson Young wrote of the sensuous experience of riding in a racing car: 'It is, I think, a combination of intense speed with the sensation of smallness, the lightness, the responsiveness of the thing that carries you, with the rushing of the atmosphere upon your body and the earth upon your vision' (quoted Liniado 1996: 7).

In Edwardian and later in inter-war England another way of inhabiting the road developed. This was based around the concept of the 'open road' and the slow meandering motor tour. Motor touring was thought of as 'a voyage through the life and history of the land'. There was an increasing emphasis upon slower means of finding such pleasures. To tour, to stop, to drive slowly, to take the longer route, to emphasise process rather than destination, all became part of the performed art of motor touring as ownership of cars became more widespread. Filson Young wrote of how 'the road sets us free ... it allows us to follow our own choice as to how fast and how far we shall go, to tarry where and when we will' (quoted Liniado 1996: 10). Such a novel spatial practice was facilitated by organisational innovations partially taken over from cycling clubs. These 'paved' the way for the inter-war transformation of the motor car, from alien threat to a 'natural' part of the rural scene. Light notes how 'the futurist symbol of speed and erotic dynamism - the motor car - [was turned] into the Morris Minor' in the inter-war years (1991: 214). In that period motoring had become an apparently 'natural' yet hugely fateful way of experiencing the countryside.

While in the US car ownership became 'democratised' where even the dispossessed of the Great Depression travelled by car (Graves-Brown 1997: 68; Wilson 1992: chap 1). Movement itself became a measure of hope; the road itself seemed to offer new possibilities, of work, adventure, romance. *The Grapes of Wrath* tells the story of hope and opportunity travelling along perhaps the most famous of roads, Route 66 (see Eyerman and Löfgren 1995: 57). Up to the Second World War automobility involved 'inhabiting the road'. The car-driver is part of the environment through which the car travels and the technologies of insulation do not exist

or have not been repaired. The car-driver dwells-on-the-road and is not insulated from much of its sensuousness, whether the driver is breaking speed records or slowly meandering the open road.

This began to change especially with the inter- and post-war period of massive suburban housing predicated upon low density family housing with a sizeable garden, many domestic production goods for the 'wife' to use, and a car to enable the 'husband' to travel quite long distances to get to work. It has resulted in 'auto sprawl syndrome' in which cars make urban suburbanisation/ sprawl possible and in so doing force those living in such areas dependent upon the use of cars (Scenesustech 1998: 100). In the US the massive programme of road building beginning in 1952 was seen as having an important democratising role. Indeed American culture is inconceivable without the culture of the car and its sounds (such as Kerouac's *On the Road* or the films *Easy Rider, Rolling Stone, Alice Doesn't Live Here Anymore, Bonnie and Clyde, Vanishing Point, Badlands, Thelma and Louise, Paris, Texas* and so on: Eyerman and Löfgren 1995; Bull 2000).

More generally, Baudrillard writes of the post-war American landscape as the 'empty, absolute freedom of the freeways ... the America of desert speed, of motels and mineral surfaces' (1988: 5). American post-war landscapes are empty and stand for modernity and the rejection of the complex histories of European societies. This emptiness is a metaphor of the American dream. Wilson also emphasises the horizontal quality of the landscape seen through the car windscreen: 'the faster we drive, the flatter the earth looks' (1992: 33). He describes how in the post-war period certain landscapes in the US were substantially altered so as to improve the view that they afforded from cars travelling the newly constructed roads. The Federal and then the local states turned nature into something 'to be appreciated by the eyes alone', looking out and over the scene laid out before the invincible and cocooned car-driver (Wilson 1992: 37).

In this second stage the car-driver in the west dwells-*within*-the-car, one effect of which has been to provide much greater safety for the car-driver since risks have been externalised onto those outside. Those who dwell within the car are also able, not only to prevent the smells and sounds of the road outside from entering the car, but also to produce an environment in which a certain sociability can occur. Car-drivers controls the social mix in their car just like homeowners control those visiting their home. The car has become a 'home from home', a place to perform business, romance, family, friendship, crime, fantasy and so on, a home that according to Pearce transforms actual 'home' as one may be constantly on the move to and from especially the home of one's childhood (1999).

Unlike 'public' transport, the car facilitates a domestic mode of dwelling. The car-driver is surrounded by control systems that allow a simulation of the domestic environment, a home from home moving flexibly and riskily through strange and dangerous environments. As one respondent to Bull expressed it: 'You and your car are one thing and that's it and that's your space. Outside it's different. You're in your time-capsule, it's like your living room, your mobile living room' (2000: 17). The car is a sanctuary, a zone of protection, however slender, between oneself and that dangerous world of other cars, and between the places of departure and arrival.

Central to this zone is the soundscape of the car, as new technologies of the radio, the cassette player and the CD player have increasingly ensured that this mobile home is filled with sound (see Pearce 1999). Almost better than 'home' itself the car enables a purer immersion in those sounds, as the voices of the radio and the sound of music is there, in the car, travelling right with one as some of the most dangerous places on earth are negotiated (see Bull 2000 on researching the soundscapes of the car). Stockfeld describes the car as "the most ubiquitous concert hall and the 'bathroom' of our time" as sounds are privatised out of the context in which they are produced (quoted Bull 2000: 4; see Urry 2000: chap 4 on the senses). Music and voices in the car fills the space and substitutes for other forms of sociality and life. Indeed in a sense inhabiting the car becomes inhabiting a place of sound and of technologies connecting people to a world beyond. As Heidegger said about the radio in 1919: 'I live in a dull, drab colliery village ... a bus ride from third rate entertainments and a considerable journey from any educational, musical or social advantages of a first class sort. In such an atmosphere life becomes rusty and apathetic. Into this monotony comes a good

radio set and my little world is transformed' (quoted Scannell 1996: 161). The car radio analogously connects the 'home' of the car to the world beyond.

Third, at the beginning of this new century, there is a new shift occurring towards 'inhabiting the intelligent car'. As information has been digitised and released from location, cars, roads, and buildings have been rewired to send and receive digital information - for example in the building of 'Intelligent Transport Systems' (ITS). Information is now inhabiting the car in very significant ways. Until now this information has been mainly for traffic control or car and road safety, for example through computer-assisted operation control systems, dynamic route guidance, and traffic information systems (see Sparmann 1992). However, more significant than this is the possible development of transformed vehicles, smaller, lighter, smarter, information-rich, communication-enhanced vehicles better integrated into the public transport systems and public spaces.

Telecommuting will not be *the* key to transforming urban life because people like and need to be physically mobile, to see the world, to meet others and to be bodily proximate, and to engage in 'locomotion' (see Boden and Molotch 1994, on the compulsion to proximity). Current developments such as the huge popularity of mobile telephones instead suggest that many people want to engage in communication simultaneously with locomotion – to walk and talk or to drive and jive. Mobile ICTs are also increasingly central to work-practices and information gathering in contexts of unavoidable time-space distanciation and fragmentation. The introduction of flexitime would smooth out and redistribute rush-hour peaks if communication could occur in transit. It is already possible to check voicemail from a mobile phone, but soon e-mail will be found in the car or train, electronic memos will be sent, and mobile banking and electronic shopping will be commonplace (see Gow 2000, on surfing in the car).

Car manufacturers have already begun production of various micro-cars, such as the Mercedes Smart Car, the Honda Insight made mostly of aluminium and powered by both an electric motor and a small petrol engine, and BMW's motor cycle/car hybrid the C1 (see http://bike.brnw.com/english/c1/navigation/index.html). Such micro-cars will in the next decades be probably powered by the hydrogen fuel cell and made of carbon-based fibres derived from nanotechnology which can be 100 times stronger than steel at one-sixth of the weight (see US Department of Transportation 1999; and see Hawkin, Lovins, Lovins, L.H. 1999, on other moves to replace the 'steel-and-petroleum car). The key to integrating such 'post-steel-and-petroleum' cars into a mixed transportation system will lie in a multifunction 'smart-card' that will transfer information from home, to car, to bus, to train, to workplace, to web site, to shop-till, to bank (a system already under development possibly through the use of 'iris-recognition technology'). Cars could then be partially deprivatised by making them available for public hire through using such a smart-card to pay for their use, as well as to pay fares on buses, trains, or more flexibly-routed collective mini-vans. Smart cards for welfare recipients, students, families with young children, and the elderly could be subsidised. But all of these vehicles would have to become *more than* technologies of movement – they would also have to be hybridised with the rapidly converging technologies of the mobile telephone, the personal entertainment system and the laptop computer.

Small cars would no longer be at the bottom of the profit scale; the innovation of new ICT applications would provide an endless source of novelty, desirability and profitability. Micro-cars and all other forms of transport would be personalised with one's own communication links (e-mail addresses, phone numbers, world wide web addresses, etc) and entertainment applications (digitally stored music in its memory, programmed radio stations etc), but only when these are initiated by inserting the smart-card (see Gow 2000, on how voice-activated telematics are already being installed in new Fords and GM cars). Thus any public vehicle could instantly become even more of a home away from home: a link to the reflexive narratives of the private self in motion through public time-space scapes. Streetscapes could thus be transformed through a more mixed flow of slow-moving semi-public micro-cars (often for one rather than four persons and not built of steel), bike lanes, pedestrians and improved mass transport.

Inhabiting smart cars would allow people to travel lighter, if not weightlessly, and could restore some civility to public spaces destroyed by current traffic flows and the spatial patterns of

segregation and fragmentation generated by automobility. Could such smart-cars be the best way to lure twentieth-century speed-obsessed car-drivers to give up their dependence on 'steel-and-petroleum' cars, a system unsustainable on most measures and really a very old-fashioned Fordist technology? Urban planning that recognises the need for a radical transformation of transport could use existing legislation and regulation in new ways, to build 'integrated' and 'intermodal' public transport systems. However, rather than trying to stifle mobility which has been the strategy until now, societies must draw on and harness the power of the democratic urge to be mobile, hybridised and inhabiting the iron cage of motorised modernity. Overcoming the awesome constraints of existing automobility could make us recognise and harness its peculiar auto-freedom as we may increasingly come to inhabit the intelligent car.

Acknowledgements

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