Driving through Car Geographies

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Abstract

This article analysis the ways in which, mostly in western societies, the development of mobility, and especially the development of automobility has been and is, one of the major elements of the transformation of cities and urban areas, and has influenced not only physical forms but also people's social and cultural interaction with places. People's appropriation of the car has resulted in very diverse and rich ways of experiencing space, and this article calls for a more creative Geography of automobility. Examples are drawn from several European countries and North America, while there is an attempt to focus in more detail, whenever possible, on Portugal.

Keywords:
Automobile;
Mobility;
Urban spaces;
Construction of place.

Resumo

Este artigo analisa as formas como o desenvolvimento da mobilidade, especialmente da automobilidade, tem sido e é, um dos elementos principais de transformação das cidade e de áreas urbanas, e tem influenciado não apenas formas físicas mas também a interacção social e cultural das pessoas com os lugares. A apropriação do automóvel tem também resultado em formas diversas e muito ricas de vivenciar o espaço, e este artigo apela a uma Geografia do automóvel mais criativa. Usam-se vários exemplos de países europeus e da América do Norte, havendo uma tentativa de destacar o caso português.

Palavras-chave:
Automóvel;
Mobilidade;
Espaços Urbanos;
Construção de lugar.

I Introduction

Contemporary urban spaces are the result of many centuries of morphological, social and cultural spatial transformations (Hall 1998). Yet, the last decades have witnessed unprecedented changes that have modified cities and urban spaces. For some authors, these changes are so deep that contemporary cities have little in common with the past: "…in its new incarnation, the diffuse, sprawling, and endlessly mobile world metropolis is fundamentally different from the city as we have known it…" (Sudjic 1992). For others, such as Soja (2000), the postmodern metropolis can be understood as a contemporary way of life marked by profound continuities with the past. Borja and Muxí (2003) have argued that we have witnessed changes at least as dramatic as those which urban areas are facing today: the passage from the walled city to the *ensanche*, for example.

In order to make sense of the new types of urban spaces that have been partially or totally created in the last decades, several authors have developed a rich terminology such as Exurbia, Metropolis, Outer City, Edge City, Ville Archipel, Troisième Ville, Ville Émergente, Ville Éclatée and Pulp Urbanscape, which is connected to ideas such as Splintering Urbanism (Graham & Marvin 2001). Many of these urban transformations result directly or indirectly of the tremendous growth in the usage of the motor car and the adoption of the private motorised vehicle as the most popular form of transportation: 82,8% of all land transport in the EU-25 in 2004 (Eurostat 2007).

Obviously that the availability of infrastructures such as water supply, sewerage system, electricity and connection to telecommunication networks are also fundamental (and generally more expensive when we are dealing with low density developments). These labels define more than just physical structures and configurations, they include social and cultural patterns and behaviours and a series of associated territorial dynamics.

What I would like to discuss in this article is the ways in which, mostly in western societies, the development of mobility, and especially the development of automobility has been and is, one of the major elements of the transformation of cities and urban areas, and has influenced not only physical forms but also people's social and cultural interaction with places. Furthermore, people's appropriation of the car has also resulted in very diverse and rich ways of experiencing space. At the same time I want to highlight the ways in which we have and still are assisting to a process of a single-minded approach to mobility, as though speed and mobility were the only and ultimate justification, having an overriding virtue of their own. Even taking into consideration that I do not address the messiness and multiplicity of ways through which automobility has manifested itself across the world, I draw on examples from several western countries, notably the United States, and attempt to focus in more detail on Portugal, in order to travel through many aspects of car geographies.

II Auto-mobility

Mobility may be understood as the ability to move people, goods and ideas across physical space. It includes the dynamics of speed, light and power (Thrift 1996), and it

may represent the study of an extraordinary conglomeration of fibre-optic cables, radio spectra, digital lines and good old-fashioned copper cable. As Sheller and Urry (2006, p.207) argue, "All the world seems to be on the move. Asylum seekers, international students, terrorists, members of diasporas, holidaymakers, business people, sports stars, refugees, backpackers, commuters, the early retired, young mobile professionals, prostitutes, armed forces (…)". Cities, and urban spaces, should be understood as spatially open and cross-cut by many different kinds of mobilities, from flows of people to commodities and information. The existent constant flux is therefore constituted through many superimposed, contested, and interconnecting infrastructural 'landscapes', which provide the mediators between nature, culture, and the production of the 'city' (Graham & Marvin 2001).

At the same time, the concept of mobility is often linked to discussions about individual rights and freedoms and is seldom portrayed as a basis for prosperity, or as an expression of freedom and choice. Shove writes: "more freedom means less choice, for it seems that cars simultaneously create precisely the sorts of problems which they also promise to overcome" (1998, p.7). Mass mobility does not generate mass accessibility. Automobility also reduces choice. Because of the increasing physical separation of homes, workplaces, leisure sites, families and so on, it is often impossible to use public transport, or to walk or cycle (although most journeys are still reasonably short). The freedom of the car subjects everyone to its power (even when traffic is anything but fast-moving). The shortage of time resulting from the extensive distances that increasingly 'have' to be travelled means that the car remains the only viable means of highly flexible mobility. Naturally, the power of the car is the result of also powerful lobbies of the car and oil industry, with strong political connections. Those who buy a car don't take a deep breath and rejoice in extra hours of leisure. They travel to more distant destinations. The powers of speed are converted not in less time on the road but in more kilometres travelled. The time gained is reinvested into longer distances. And as time goes by, the spatial distribution of places changes and long distances become the norm. People still go to school, to work, to the cinema, but are obliged to travel longer routes. As a consequence, as an example, in 2004 the average German citizen travelled over 10,000 kilometres by car (10,624 km in the EU-15 and 6396 km in Portugal) as opposed to only 2,000 kilometres in 1950. In that same year, in the EU-25, people drove 4458 billion kilometres, 18% more than in 1995. It is recognised that by itself, auto-mobility contributes nothing to wealth, can be wasteful of resources, and harmful to communities, and contributes to air, water and noise pollution.

Recent data shows that a more car-dependent society is more mobile, that residents in a lower density region of a city are more mobile, and that people in cities with a poor public transport system are more mobile (Kenworthy et al. 1999). In modern suburban environments, shopping, recreation and other activities can often no longer be carried out in the local neighbourhood but require longer, generally motorised journeys. Furthermore, as car ownership increases, the number of motorised trips, trip length and overall distance travelled continues to grow. Mobility can be defined as the amount of travel people undertake, and as some authors have shown (Ross 2000) there is a positive relationship between mobility and such indicators as transport energy use, motor vehicle ownership and use, journey to work distance, journey to work speed and general car speed.

Under these circumstances, it appears that mobility is rising in order to maintain accessibility, suggesting that accessibility and mobility are not always complimentary. In fact, Accessibility, unlike mobility, is always seen as a positive, regardless of how 'accessible' a city or region is, so that, unlike mobility, more is always seen as better. Nevertheless accessibility remains more difficult to define and measure than mobility: the ease of reaching a destination.

Mobility, principally people's mobility, and the emphasis that is given to auto-mobility in contemporary western societies, has contributed to particular forms of urban development. Here, I wish to limit my attention to auto-mobility, which in a sense involves a paradox: automobility enables huge physical displacement under a condition of complete immobility for the road user while driving (Beckmann 2001).

Urry's (2000) recent argument that sociology has barely noticed automobility (see also Branco & Ramos 2003 in relation to Anthropology) applies equally to Human Geography. Geographers have looked very little at automobiles as a technology that has tremendous impact in the spatial form of the city (just like the elevator, the steel infrastructures, electricity and gas, fibre optics), and on people's relationship with nature - the rural and the countryside, on the economy, and on social and cultural practices. Transport geographers study transportation and modes of transport, their spatial characteristics, but the social, cultural and territorial implication and consequences of adopting this iron (or steel or aluminium) cage of modernity, as the sociologist Urry names it after Weber, has barely been analysed in depth.

III The car

According to Heidegger, machinery "unfolds a specific character of domination ... a specific kind of discipline and a unique kind of consciousness of conquest" over human beings (quoted Zimmerman 1990, p.214). In the twentieth century this disciplining and domination through technology is most dramatically seen in the system of production, consumption, circulation, location, spatiality and sociality engendered by the 'motor car'. About one billion cars have been manufactured this century, and in 2005 there were about 600 million cars world-wide (over 200 million in the EU-25, that is 476 per 1000 inhabitants or one car for two people, 37% more than in 1990), most of them in cities, a figure expected to double by 2015 (Shove 1998). While in 2003, there were almost as many

cars as people the United States (777 cars per 1000 people), one third of Americans do not have a driving licence. Often, elderly and young people find themselves marginalised by not having accessibility to various places, being dependent of others to go shopping, to plan weekends away, to party, etc. At the same time, less than 10% of the worlds' population owns a car, a figure which reveals a very strong positive correlation between cars per capita and wealth. In Portugal there are 397 cars per 1000 inhabitants, a significantly lower ratio than the EU average, but 147% higher than in 1990. Notably, Malta, Cyprus and Portugal all have more than 100 heavy vehicles per 1000 inhabitants, more than the double of most other EU countries (European Commission 2005).

The relationship between people and cars has been quite dynamic throughout the last 100 years. At first the car was constituted as a speed machine, to propel humans ever-faster. There was an obsession with the setting of new speed records. Later, the dominant discourses were those of the "open road", that is, the slow meandering motor tour that became a highly favoured middle class pursuit. In North America, the car was enthusiastically adopted by the wilderness camping and touring fraternity (Bunce 1994), a practice that has deeply shaped the imagery of the country. Just as the 19th century railways created new forms of 'nature tourism', the spread of car ownership generated new forms of cultural engagement with nature. An innovative panoramic experience, where visual power largely dominated the tactile and olfactory senses, was shaped. Landscape roads involved a deep refashioning of aesthetic sensibilities towards both nature and urban space. Some 'parkways' in New York could only be experienced by car, since underpasses were purposely built too low for buses, creating a 'distinctively techno-garden', a uniquely privatised form of public space (Gandy 2002). At the same time, with mass migration to the suburbs and easy access to the countryside provided by cars, the arguments for the provision of nature in cities lost their rhetorical power.

Nowadays, there is a discourse of the car as the "inhabiting the intelligent" (Urry 2000), despite a close inspection to automobile technologies reveals that nothing substantial has changed from the early twentieth century[1]. Yet, contemporary cars are filled with computers and sensors that enable us to sense and quantify the outer environment. Automobility affords dwelling inside a mobile capsule that involves punctuated movement 'on the road' from home-away-home. In each car the driver is strapped into a comfortable armchair and surrounded by micro-electronic informational sources, controls and sources of pleasure, what Williams calls the 'mobile privatisation' of the car (Pinkney 1991, p.55) and of the city. Many aspects involved in directing the machine have been digitised, at the same time that car-drivers are located within a place of dwelling that insulates them from much of the environment that they pass through.

The sights, sounds, tastes, temperatures and smells of the city and countryside are reduced to the two-dimensional view through the car windscreen, something prefigured by railway journeys in the nineteenth century. The sensing of the world through the screen has of course become the dominant way of dwelling in contemporary cities. The environment beyond the windscreen is an alien other, to be kept at bay through the diverse privatising technologies incorporated within the contemporary car. These technologies ensure a consistent temperature (with the standardisation of air-conditioning), large supplies of information, a relatively protected environment, high quality sounds and sophisticated systems of monitoring. They enable the hybrid of the car-driver to negotiate conditions of intense riskiness on high-speed roads, as software controls engine management, brakes, suspension, wipers and lights and crash protection systems. If on the one hand roads are risky because of the reduced road-space now available to each car (Urry 2000), on the other hand, to 'intelligence vehicles' we must provide 'intelligent streets', loaded with software that surveys and manages traffic, allowing the fantasy of freedom driving.

Technology is responsible for the car becoming a mobile, privatised and sophisticated communication machine. It is up to the driver or passengers to decide whether to work, to socialise or to pass time. It is very common that

the car is used and lived as an entertainment space, being a space of performance and communication. Interpersonal communication between drivers and 'absent' others, where drivers report being in dialogue with the radio or singing in their own auditised/privatized space (Bull 2004). At the same time, emphasising the increasingly disconnection between the environment of the car and the 'outer' world, automobile users often claim that the spaces they habitually travel through hold little interest for them.

In a printed advertisement for Volkswagen Sharan, in order to illustrate the inclusion of two DVD screens on the rear seats of the van, we see five kids about entering the car as if they were going into the cinema – tickets and popcorns available, as we read 'when entering, please turn off your mobile' (Fig.2). The car is no longer just a machine for physical movement; it is above all, an entertainment space. Just as with other more obvious productive ways of spending time in trains, planes and buses (Hannam, Sheller & Urry 2006), the car becomes a moving environment for leisure and work.

More recently, and as a result of the development of mobile technologies, the car has increasingly become a working place, a mobile office. Some car models, such as the *Renault Espace*, allow a rearrangement of the interior space and are easily transformed into offices. Still, various insurance companies require that costumers declare they use the car as an office, and surcharges apply to comply with the changes of use. The car should no longer be perceived as an isolation capsule where we travel alone (aren't people also alone in the middle of the crowd at subways and buses?), but increasingly cars are places of communication. We talk to relatives and friends, we take calls using Bluetooth technologies (and those who do not use them are fined but continue to do so).

Figure 1: Cinema on the move | Source: Expresso 1686; Caderno Única p.73 (19.2.2005)

i (Auto)Mobility practices

Looking at many of our contemporary urban environments, the idea of de Certeau (1984), that walking is as constitutive of the city as speech acts constitute language, becomes somehow outdated. Paralleling the worldwide rise in the number of cars, the number of walkers is nowadays much lower than in the past. Walking has decreased in importance in its degree of shaping the dwelling and uses of places[2]. Despite the existence of particular situations[3], and some remarkable examples (Freiburg, etc.) this decline in walking has been the rule in most western countries. Connected to this issue is the fact that urbanity and the urban experience are strongly associated with the body. Inevitably, the dominance of the motor car, the decline of walking, and the growing patterns of obesity are producing different urban spaces from the past[4].

The apparently bizarre way in which people use cars is clearly exemplified by a recent study (Study project 2004). Here it was found that the majority of students of the University of Minho who live in the students' accommodation in Guimarães and own or use a car, prefer to drive 1,5 kilometres, spending between 20 and 30 minutes on their journey to lectures (15 to 20 minutes more), than walking approximately 400 metres for about 6 minutes[5]. The reasons for this behaviour are connected to safety, flexibility and multi-destination journeys, but above all, related to social and cultural ideas. The result of the auto pressure has been an increase in the capacity of the car park in and outside the campus, which has not improved the situation. Motorised students do not travel to the historic centre – under 1 km – because of parking difficulties, and prefer to travel to Guimarães Shopping, where despite traffic, there are convenient parking places free of charge. At the same time as further research and analysis of other situations is urgently needed, the city politicians and planners are continuing a process of building further car parks near the centre, planning on presumption and possibly misjudgement.

In 2004 the share of transport in final energy consumption in the EU was 31% (36% in Portugal) or 290 million tonnes of oil equivalent, of which 82,5% (87,2% in Portugal) was road transport (Eurostat 2007). In 2004, 93% of greenhouse gas emissions derived from road transport (EEA 2007). In 2006 the automobile has been recognised as the primary source of world-wide air pollution. Yet, for decades we know that the car pollutes, congests arteries and demands space for circulation and parking. Why haven't we invested more and produced special vehicles with reduced speed and power, polluting less and occupying less space? While there are circa 4,6 million vehicles worldwide using natural gas, in Portugal there are only 283. Furthermore, no more than 3 are private.

Naturally that new challenges and serious environmental and social problems will arise when developing countries reach near western patterns of car ownership. In some Chinese cities, bicycles are being put aside by planners. In Beijing, houses of the poor are being bulldozed to make way for new roads. In Deli, rickshaws have been forbidden on some weekends, and soon cows will not be allowed in streets. Shangai, Jakarta, Manila and Bangkok, among others, are becoming the worlds' most congested cities. In 2005, 1,2 million cars and trucks were sold in India, and the expected growth is 9% per year for the next five years; and this is (still) a relatively small market, if we look at the 17 million

vehicles sold in the US in the same year, and the 63 million worldwide. Modernisation or the modernity of mobility is arriving.

An analogous situation occurs when we look into road accident statistics. If on the one hand numbers demonstrate that road deaths are the leading cause of mortality in adolescents and young adults worldwide, while in the EU numbers of road fatalities - 25% of the deaths of those under 20 years of age in the EU-27 - have been dropping - -42% in EU-25 from 1990 to 2005 and -53% in Portugal in the same period (Eurostat 2007), it is in the developing countries and in countries newly motorised that road accident rates are highest. In 1998, more than 85% of all deaths and 90% of disability adjusted life years lost from road traffic injuries occur in developing countries (Nantulya & Reich 2002). China for example has a death rate almost four times that found in the UK. If car ownership levels in China reach those in the UK an annual death rate of 13.5 million people would apply (Wells 2007). Furthermore, while in the EU-21 62% of those killed in road accidents are the drivers of the vehicles (60% in the US), in Kenya this number is only 10%, tossing the consequences of accidents to the poorer and already excluded from automobility.

In the 1990s, the rise of popularity in numbers of SUVs in North America, and also throughout the western world, brought a new relationship between people and urban space, and at first, one would expect, a stronger relationship with the more 'rough' urban surroundings and the countryside. SUVs provide a private place and the feeling of being secure and safe in an increasingly fragmented, isolated, dangerous and ghetto-like urban environment, where public spaces are being erased. On the one hand there is a greater consciousness of fatal car crashes in urban environments, and SUVs, despite not being safer than any regular cars, have an image of being safe. On the other there is a feeling of insecurity that is attenuated by using a higher and supposedly 'tougher' vehicle.

SUVs had also the potential to disrupt the spatial dialectic between urban and countryside environments. SUVs carry the idea that their owners are closer to natural areas, to roughed countryside: adventure is just at our door step; SUVs can quickly take us away from urban congestion and pollution to quiet and contemplative landscapes. Yet, nothing like this happens. Only about 5% of these vehicles are taken off-road (US in 2001), and the vast majority are used for daily driving. Thus, SUVs bring additional environmental pressure. Presently, one out of four cars bought in the US is a SUV, and in Europe, it is predicted that SUVs will make about 7% of total market by 2008. In Portugal, while sales of 'Todo o Terreno' (all terrain) were less than 2% of the total of cars in 2004 (up from 1,6% in 2003 and 1,3% in 2001 – in 2000 there was a big change due to tax increases), SUVs made 9,7% of total sales (ACAP 2005).

At the same time, the 'masculine' appeal of the SUVs has increasingly attracted professional mothers, as they cultivate a high-achieving public persona in the workplace, while the more familial aspects of the SUVs (room for shopping, children's friends and equipment, cup-holders and video consoles) enable them to maintain a more caring 'feminine' side, both roles being over determined by prevalent gender inequalities (Sheller 2004).

IV Automobility and urban fragmentation

> "The fragmented city has the tendency to be a physically segregated city, socially unjust, economically inefficient, culturally miserable and politically ungovernable. It is the opposite of a city". (Borja & Muxí 2003, p.34)

It is possible to map out the genesis of new thinking about cities, technology and mobility to the post-Haussmann era of land use zoning and regional planning which developed throughout much of Europe during the 1880s. Haussmann's comprehensive urban reconstruction was followed by Ildefonso Cerdá in Barcelona, Otto Wagner in Vienna, among others, and later by Eugène Hénard and Tony Garnier in France. Hénard in fact, designed remarkable sketches for traffic circulation, inventing the traffic roundabout at a time when the automobile was virtually unknown.

A particularly American variant of the avant-garde city characterised by the increasing scale of the urban imagination applied to the reshaping of the modern metropolis can be found in the late 1920s, and it is hardly original to identify the enormous impact of mass automobile ownership on western cities. The necessity of vertical separation of different flows of 'foot, wheel and rail' in order to create a multidecked urban landscape of speed and mobility was proposed by Corbett. Le Corbusier stressed the qualities of the car in the changes of houses and great buildings, and as early as 1933, in *La ville radieuse*, called for the replacement of 19th century New York with a high-speed modern metropolis, stressing the need to adapt to the technologic logic of capitalist urbanisation. Frank Lloyd Wright's regional vision welcomed the dispersal of urban form enabled by technological change,

in order to foster a closer interaction between society and nature. Gradually, the regional planning ethos was replaced by a profit-driven technocratic vision and dominated by the ever greater demands for private space symbolised by the emerging 'autopia'. Under technological modernism, the disconnection between urban design and nature is best perceived as an emerging tension between the public nature of 19th century urbanism and the privatised nature emerging from the car-oriented Fordist era of mass consumption and new middle-class aspiration (Gandy 2002). The pleasures of an automobile-oriented urbanity were seen by Peter Hall, who envisaged a possible London stretching from Cambridge to Brighton woven together by a vast network of high-speed 'expressways' (Hall 1969). Despite this early attention to aesthetic and technological changes in urban space, very little scientific attention has been paid to the emergence of the automobilisation of western cities.

To a large extent, while the train provided the opportunity for suburbanisation, it kept cities together and gave them physical cohesion. As Mumford (1938) illustrates, the train centralised and concentrated people and economic activities. The city extended itself through continuous suburbs. By contrast, the car has been responsible or enabled the decentralisation and suburbanisation of cities and the creation of discontinuities. The automobile, especially from the mid 20th century, has been the key to urban organisation. A remarkable example is the development in New York of landscaped roads – 'urban parkways' – which contributed to a new blend of nature, technology and urban design (Gandy 2002). Robert Moses' new multilane highways combined unprecedented mobility with totally new vistas.

The development of Radburn, in New Jersey, innovated urban planning by introducing the concept of segregation between traffic systems and pedestrian networks. At first, influenced to a great extent town development throughout the Anglo-American world, and to this day remains a persuasive model guiding contemporary urban developments throughout the world. This trend of attempting,

through design, to separate vehicular traffic from pedestrian activity, was further developed by Buchanan, in his famous report of 1963 *Traffic in Towns*. While the pedestrian precinct was created and since then modern traffic engineering attempts to minimise the potential conflict between cars and people, no equivalent to Buchanan's report has been published in the last 40 years (Hamilton-Bailie 2004).
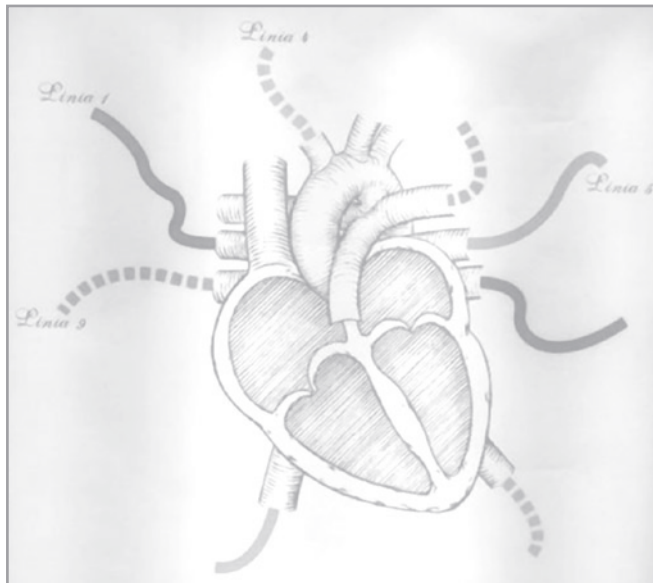

Figure 2: The City as a lived complexity | Source: Outdoor in Barcelona subway, the author, Barcelona, Spain, February 2004

Urban development, along with other types of development (industrial and agricultural for example), has produced, from an ecological perspective, an increasingly fragmented landscape. Natural or semi natural units are smaller and more disconnected and ecological processes occur in less desirable ways. Re-naturalisation strategies and plans exist and are, in some cases, implemented, but only in very specific contexts, having little effect in the overall tendency which is land fragmentation. By speeding things up, or offering increased flexibility, contemporary

technologies, systems and infrastructures of mobility permit the fragmentation of episodes into smaller and smaller 'units' thereby increasing the challenge of co-ordinating what become separate events. In addition, and in order to cope, individuals adopt responsive strategies that enhance their ability to follow space-time trajectories of their own choosing; yet, when everyone else is doing the same, the problem of co-ordination increases further. The upshot is an increasingly 'do-it-yourself' society (Southerton, Shove & Warde 2001) held together in space and time

through a patchwork of individually negotiated arrangements. Obviously that the fragmentation of urban space is only achieved through the automobilisation of society. Apparently, there are very few proximity spaces. People's mobility occurs between distant places. The fascination of the motor car is related to the "thereness" of the spaces it generates, and the particular structures of feeling and particular sets of moral imperatives and dilemmas that come to be organised through the technical and corporeal machines in which it is implicated (Latham & McCormack 2004).

At the same time, as cities grow, as new housing is built, as new streets and urban highways are constructed, old paths, part of traditional networks that connected rural to urban areas, are lost. That is the case of Guimarães, a medium size Portuguese city. Apparent auto mobility is achieved, since fragments of the urban space are tied together, at the same time as pedestrian mobility is reduced. Urban pedestrian paths, stairs, passages, lanes, etc., once a used and useful network, become fragmented, marginalised, with little traffic; they become the place for illegal activities, and acquire negative connotations related to crime, drugs and so on. This is just a step in the process of closing them down, because they are not used, because they are dangerous, because they are not part of the mobile urban space.

Automobility is critical in the fragmentation of space. It divides workplaces from the home so producing lengthy commutes; it splits home and shopping and downplays the role of local retailing outlets to which one might have walked or cycled (local retailers are usually on the cars' side, despite various studies illustrating that pedestrians and cyclists buy more than drivers in small central shops); it separates home and various kinds of leisure sites which are often only available by motorised transport; it splits up the members of families who will live in distant places and which necessarily involve complex travel to meet up intermittently; it entraps people in congestion, jams, temporal uncertainties and health-threatening environments; it encapsulates people in a privatised, cocooned, moving environment which uses up disproportionate amounts of physical resources (see SceneSusTech 1998).

ii Suburbanisation and consumption

As early as 1931, the Californian real-estate commissioner Stephen Bornson saw California as a 'deluxe subdivision – a hundred million acre project' (In Fishman 1987, p.155). This vision, which to a large degree was proved right, was only possible due to the unprecedented dominance of the car. Yet, Los Angeles, the prototype megalopolis subjugated by cars, owes its polycentric and suburban form to the interurban - electric railway system that came to link up all small places, and not to the motor car (Hall 1999).

During the interwar years, American cities such as New York, Chicago, Minneapolis, Kansas City, Seattle, among others, ensured the dominance of the 'suburban solution' over 'urban congestion' through the development of a regional decentralisation facilitated by the highway system (Gandy 2002). The car introduced fluidity to urban form, and several authors described the rise of a new kind of sprawling, low-density metropolis.

Low density urban spaces and social practices of middle classes, which prioritise auto-mobility

and urban bypasses, emphasise urban segmentation, promote new urban ghettos, increase distances and multiply congestion. We may argue that the desegregation of functions in the contemporary city is the primary cause for social alienation. And we may pose the question 'is the city as a collective house disappearing?' The natural dynamics of space become irrelevant, while urban sprawl and expansion has been responsible for the increasing separation between the urban and the rural, developing along the principal road axes.

Between 1972 and 1992, in the Metropolitan Area of Barcelona (the city has a density over 15,000 inhab/km²), the consumption of space has doubled (Borja & Muxí 2003). In LA, territorial consumption between 1970 and 1990 was 200%, while population growth was only 45%. In 22 French cities between 1975 and 1990 population grew 25% and the size of urbanised space doubled. This is only possible because of automobility.

In western societies each car has two or more geographically distant parking places: one outside the home, the other at the workplace (existing various others third spaces). Up to half the land in large urban centres is given over to car only environments, which are much of the time actually unoccupied – the average private car stands still for 23 hours every day or 95% of its life time (Hagman 2006). Despite interesting exceptions[6], cars are the ultimate mono-crop because, in the vast majority of cases, nothing else can grow in such environments of 'car parks' even when they are not present (which they are for most of the time). Allocating these places and periods of temporary storage is of course

immensely contested, with 'market' and 'rationing' systems being variously deployed.
If we take into account the access drives that cars need, about 32,5 m² are typically allocated for each parking space (usually it is designated 5x2 metres or 4,5x2,3 metres). Considering that we provide, when we build, not one but two or three parking places per car – one at home, one at work or school, one at the shopping centre, entertainment or holiday place, we dedicate between 65 and 97,5 m²[27] to each private car. This means that at present we are consuming more land for roadways, parking lots and garages than we devote to housing or people, from a human point of view.

In 2002 there were about 29 million kilometres of roads in the world, and large areas of the globe now consist of car-only environments – apparently the quintessential non-places[8] 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. In the case of Houston and Detroit, Hamilton-Baillie (2004) refers to 70% of space made up of streets, parking lots and garages. They exert an awesome spatial and temporal dominance over surrounding environments, transforming what can be seen, heard and smelt (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'. It is nowadays very clear that one of the visual resemblances of the western urban (almost 'natural') landscape is the asphalt, the yellow and/

or white lines painted on the streets (firstly introduced in the 1920s), the traffic signs, pedestrian crossings and bullets, barriers, the orange glow of streetlights, the constant flash of headlights and stops and the intermittent flicker of the indicator[9]. The car became a common feature of everyday life.

Even if we were to cut back tomorrow on our scale of fuel consumption – through smaller cars, the innovative use of lightweight materials for car bodies, and the utilisation of more efficient engines and energy storing flywheels – this would still not address the problems of traffic congestion, parking, and social dislocation brought by the automobile (Warren 1998). All of these stem from its enormous spatial demands, for an automobile is some twenty-five times more massive than a human being, and its spatial needs multiply when it is in motion.

Generally cars are a private domain. Sometimes shared within the household, they are seldom lent to friends or others, and excluding company cars, they are usually the property and ownership of a specific some-body. They are one of the most significant objects of wealth in modern societies. A system for cars similar (although commercial) to those in use for urban bicycles for more than two decades in Copenhagen or Amsterdam (more recently in Aveiro and Beja in the case of Portugal) has been in place since the early development known as *Selbstfahrergenossenshaft*, a very localised car sharing initiative that took place in Zurich in 1948. In 2006 there were over 650 cities worldwide using car-share systems (Britton 2006), especially in Europe (mainly in Germany, the UK, Scandinavia, France, Belgium, the Netherlands and Switzerland) and in North America (see www.carsharing. net for a full listing). *Autoshare*, for example, is a Toronto-based company founded in 1998, where members (who join by paying a CAN $125 fee) have a 24 hour self-serve access to cars in over 85 locations across the city with a cost of CAN $6 an hour (including petrol and insurance). Car reservations are done online or by phone. One of the downfalls of the system is that vehicles have to be returned to the same place of pickup, limiting one-way trips. Zipcar, a US company with 80,000 drivers and 2000 cars, operates in 13 American states, two Canadian cities and in London, and is proud to say that 30% of members have sold their cars or have stopped their purchasing decision.

Automobility has been directly responsible for numerous significant urban changes. Let me provide three brief examples, which are quite significant throughout the western world and in particular in the Northwest of Portugal. Firstly we characteristically observe that there has been a trend in overbuilding new streets or widening existing ones to dimensions that are unsafe or impracticable to cross on foot. The rationale behind this common urban practice is the increasing number of vehicles in the cities, the supposed need to meet standards for vehicular safety-at-high-speeds and the sake of providing parking lanes. We now realise that streets are transformed in roads, since drivers want to 'fly across the city', across urban spaces with no barriers, free of pedestrians or traffic lights (Fig. 3). Often, simple pedestrian crosses are suppressed, and complex and unworkable ones are created, while at the same time, for pedestrians, exclusion spaces are created.

Figure 3: Flying across the city | Source: the author, Braga, Portugal, May 2006

Secondly, the "invasion" of urban or metropolitan areas on semi-rural areas, which already boast some urban characteristics, have been leading to a transformation of roads into streets with little infrastructures for pedestrians (Fig. 4). We can sense roads acquiring some characteristics of shopping 'streets', where people in cars can make "window shopping" – notably large furniture stores (many also small familiar furniture makers) and cars retailers, which require large amounts of display space. Thus we have roads or street-markets of great lengths along axes generally without a clear continuity[10]. In the northwest of Portugal these roads/streets have grown organically, lacking any spatial planning. They seldom comprise parking lots at the back of stores, and are mingled with industry, warehouses, residential houses and agricultural fields, originating circulation problems due to illegally parked cars. The commercial units along these streets generally lack elegance and quality, and therefore do not function as renovating generators. As mentioned, there is little continuity and sense of cohesion between the various businesses[11].

Figure 4: Are they streets or roads? | Source: the author, Covas, Guimarães, Portugal, October 2005

Finally, there has been a progressive transformation of public spaces or empty land into public roads (not streets). In these public roads, those without cars or without licences to drive are excluded, including very often, pedestrians and cyclists, who are no longer part of that public. In a sense, public space is democratically detained, through notions of individual choice and personal flexibility, and then turned into public roads. This is what Urry (2000) names a civil society of automobility. The mere fact of being possible to park or leave a private object - the car – in public space is open to question. In many places, road tax and parking fees are inadequate to make for the expensive and well needed square metres in urban areas. How much is 10-12 m^2 worth in city centres?

V The car and the construction of Place

Place can be understood as a mental construction which relates spatial and emotional dimensions. Undoubtedly for many people the car is a place. Despite the overarching dominance of the car in western societies, there are many ways of engaging with this machine, some of them extremely important in the ways in which people develop their daily lives and they negotiate their identity. The car can be understood as a place where romance happens and a place of sexual initiation and practice (especially after the globalisation of a certain American culture of kissing and dating in cars portrayed in the Hollywood film industry). Not only the car is a meaningful place, a place of long lasting memories, but also some places become embedded with meanings deriving from this specific use of the car as a romantic place (see D. Carlos I Avenue in Foz do Douro, Oporto, for example). The car can also be seen as allowing an escape from urban stress, as a vehicle of freedom especially for youngsters and woman and (lack of) freedom for elderly people. A study of young suburban drivers in Britain suggests that 'the car is part of patterns of sociability' and the anticipation of new possibilities, since sociability generates 'an extraordinary and exciting moment of consumption' for young drivers (Carrabine & Longhurst 2002, pp.192-193). Dowling (2000) has shown how cars are key to the understanding of mothering in the context of suburban Australia[12].

When sports fans are celebrating their teams' victories they use the cars to drive along the most meaningful public spaces in the city (Aliados avenue in Oporto, for example), beeping and shouting, showing flags and celebrating 'on the move'. Here the car is no longer a cocooned environment celebrating the technological sublime. The car is a mobile environment that allows a strong interaction with the street and with the people that stand still or move by walking these celebration spaces. The most 'precious' cars at these occasions are convertibles or pick-up vans which allow people to stand up, and more recently, double-deck buses with open roof top (observe the celebrations of most European teams when winning their countries soccer leagues). Cars can also be used as weapons in contested arenas. The 1994 protests against the 50% toll price-increase in Lisbon's bridge – Ponte 25 de Abril – were based on a 'buzinão' – beeping and blocking the roads for an entire day. In Portugal this type of protest became very popular and since 1994, cars, grouped as a collective mass, have been used

regularly to attempt to send across messages (a slow march in 2003 in the road IP3, known as one of the three 'roads of death' together with IP4 and IP5 now A25). It is as if people are more visible, noisier.

Here I argue that the car is not an illusory private place, but a meaningful mobile place and many lines of enquire can be followed when looking at the car as a meaningful place. Let me provide some examples.

i Identity

<div style="text-align:center">

My friends' dream is to have a GTI
No matter what make, what colour
My friends' dreams is to have a GTI
No matter if it's English or Japanese[13]
Clã song, lyrics by Carlos Tê

</div>

The car is, in many cases, the front view of one's identity and partially for technological reasons, drivers experience cars as extensions of their bodies (Katz, 2000). The 'humanised car' meets the 'automobilised person' (Katz 2000; Thrift 2003) and discovers they are cousins (Sheller, 2004). This quasi-biologic 'cyborg' identity plays a key role in the structuring of our spatial practices and influences. One particular group of users, who, apart from collectors, cherish the car like no other, are car modifiers, 'street racers' or 'boy racers' as known in the UK, Ireland and New Zealand, who are part of the 'tuning' movement, as known in Portugal. 'Street racers' use the car on the borderline of illegal practices and nocturnal spaces. Tuning can be understood as a mix of sport and hobby, with a strong dose of masculinity performance, which consists of personalising a car by changing its characteristics. The principal goal is to make the car unique. Changes in the engine, etc. may cost more

than the actual cost of the car, and people involved in tuning will gather regularly in informal meetings to show their cars to each other, and less frequently, in formal meetings and exhibitions. Hi-fi systems are also important in this 'game', and often cars resemble discos, having the practical effect of serving as a night entertainment. The performance of the car is one of the central aspects of tuning. Often street racers compete in Vasco da Gama Bridge in Lisbon, racing from one side to the other, reaching speeds of 300 km per hour. Money beats are sometimes used. Underneath tuning there is a powerful industry of car parts: skirts, ailerons, bumpers, lighting kits, music systems, navigation systems, and so on. Individual or interest group identities seen through cars can also give way to the analysis of national and regional identities and the car. As Koshar (2004) argues, cars and nations have created close bonds with one another over the past century.

Table 1: The Car and identities

Tuning (the author, Guimarães, Portugal, 2007)

Naming the Car (the author, Latvia and Lithuania, 2007)

Naming and re-naming the country (the author, Serbia and Montenegro, 2006)

Claming identity (the author, Barcelona and Bordeaux, 2005)

The car as a shop (the author, Montenegro, 2006)

ii stopping places

> " (…) mobile machines such as mobile phones, cars, aircraft, trains, and computer connections, all presume overlapping, and varied time-space immobilities (Urry 2003, p.125).

Because place and time are intimately connected in mobility, transportation systems involve spaces and places for waiting. Sheller and Urry (2006) argue that such mobilities research will need to examine multiple 'transfer points', 'places of in-between-ness' involved in being mobile but immobilised in lounges, waiting rooms, cafes, amusement arcades, parks, hotels, airports, stations, motels, harbours, and so on. These transfer points necessitate a significant immobile network so that others can be on the move. Yet, different social groups are variably willing or able to 'wait', and demand and get very different conditions in which to wait. With the growth of 'splintering urbanism' and 'galactic metropolis', there are marked differences between groups and their increasingly segregated travel experiences (Graham & Marvin 2000, p.228). There are exceptional differences between the VIP airport lounge and the uncovered, unsafe, unlit and 'nonsmart' bus stop. The politics of time and waiting are central to the patterning of social inclusion and exclusion within an area. The more socially excluded a group the more their time patterns will involve time-inflexibility, much longer periods of waiting in less safe and provisioned environments, and what could be called 'time-dependence'. At the same time the movement of some depends upon the immobility of others (Cresswell 1991, Massey 1991).

Mobility, and automobility in particular, involves movement but also temporary moments of rest at traffic lights, roundabouts, jams, dropping off points, as the car prepares for its next mobile phase, taking up space and burning fuel and producing carbon deposits as it waits to take off again. Significant also are the relatively short periods of storage when cars are stationary for a few hours or overnight. Cars have to be housed when they are not in motion. As early as 1929, Robert Moses' designed the Jones Beach State Park, considered the first of a radically new generation of mass recreation facilities for the city, which was remarkably built with parking lots for thousands of cars (Gandy 2002).

Other less durable waiting places, such as those at traffic lights at major city crossings, become remarkable places in which several social and economic activities take place. From the relatively ubiquitous youngster that 'washes' car's windscreens in return for a variable money payment, to street vendors (from newspapers to fruits and even full meals in places), beggars and disabled people exposing their bodies, going through the distribution of flyers and promotional leaflets (notably real estate advertisement), to the occasional artist that times his/hers performance according to the time allocated by the local traffic engineers, these are un-researched places. Often, the highly regulated single-purpose, 'purified space' of the highway, is appropriated by practices which are considered 'out of place', but that with time become 'normal' and acceptable (Fig.6).

Figure 6: A daily working place | Source: the author, Rio de Janeiro, Brazil, October 2006

Furthermore, stoppage places, transitional places, are ideal for unlawful practices. Breaking windows with metal or wooden bats, even shooting at stopped cars and assaulting personal items from inside supposedly safe and private environments, has become a commonplace in Latin America cities and not a novelty in Western Europe. Not stopping at red lights especially at night is an accepted practice in many Latin American cities, such as Fortaleza or Recife, in Brazil. Thus, companies advertise safe car windows, resistant to a wide range of guns and varied weapons. At the same time, cars increasingly have tinted windows so that lonely drivers camouflage their isolation. Not being on the move is being vulnerable. In São Paulo, the most privileged residents of this megacity have chosen the helicopter as the most suitable urban transport mode to escape urban violence, traffic congestion and pollution, highlighting the surreal extremes of wealth and poverty, dividing the city in a terrestrial and an aerial dimension.

Epilogue

After this 'spin' along various aspects of the relationship between people, cars and space, I want to briefly bring to a close this discussion with four remarks on future geographical research. Firstly, cars should no longer be regarded by geographers as only machines, in the sense of mechanic and electronic sets of assembled pieces, nor as mere design artefacts or technological objects. Geographers should interrogate the car as a cultural process, as an entity with a rich iconography that needs to be questioned and carefully read. In this sense, and following on Amin's and Thrift's (2002) work which argues for a study of urban footprints, that is, the layers of meaning and history related to each place which bind places together, we need to know more about the ways in which people use the car and move through space. A car journey involves a complex simultaneity of spatial trajectories, composed of practices and thoughts of those travelling, the histories of the places crossed, and the routes of the places left. The city is full of trajectories of simultaneity, which help to have a vision of the city as spatially stretched patterns of communication, bringing distant sites into contact and separating adjacent spaces. This is close to what Katz (2000) argues in relation to the extraordinary and complex everyday 'ecology of driving', the use of tactics that are often perceived as breaking moral codes, carefully choosing streets that one knows carry little traffic, sneakily cutting across corner gas stations to beat traffic lights, discreetly using another car as a 'screen' in order to merge onto a highway, and so on.

Secondly, in accordance with Urry, we should use more mobile methods in the observation of movement. Mobile ethnographies such as 'walking with', 'driving with', 'riding with' are in need. Time-space diaries (to understand travel patterns) – daily rhythms, the study of transfer points – airports and stations, petrol stations, and so on, are also other possibilities[14]. Finally, and it was not the purpose of this article, we should look at the messiness and multiplicity of ways through which automobility manifests itself across the world.

Notes

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[1] Recently, Bill Gates compared the computer industry with the auto industry and stated, 'If GM had kept up with the technology like the computer industry has, we would all be driving $25 cars that got 1,000 miles to the gallon.' The response by General Motors was long and argued that computers and software are not reliable, especially under the influence of Microsoft.

[2] In the EU Data from London, Manchester and Glasgow shows that walking journeys to work decreased from 58% in 1890 to 8% in the 1990s (Pooley, Turnbull and Adams, 2006). In the Metropolitan Area of Oporto, while commuting on foot declined from 27% in 1991 to 19% in 2001, commuting by car increased from 23% to 49% in the same period of time (INE, 2003).

[3] In recent years we have also witnessed the growth of new forms of urban walking, namely 'Power Walking', which attempts to compensate for the lack of exercise during the working day. This type of walking is a physical exercise, just as using the gym or any other sports equipment. Walking is not so much a mode of transport as the purpose of the trip. Nevertheless, there are signs that people that walk as exercise, are starting to make pressure for better structures for walking, that is, side walks, pedestrian streets and safer pedestrian environments, even in small towns like Felgueiras, Lixa or Fafe in the northwest of Portugal.

[4] Statistics illustrate how obesity is a major health problem in most western countries. In the USA, it is reported that 60% of the population are overweight and 21% obese (Revill, 2003). This percentage has more than doubled in the last two decades, with obesity now rising by 5% per annum. A very worrying fact is that obesity is not evenly spread through the population since there are serious health inequalities with more than half of black women in low socioeconomic groups obese. In Portugal it is estimated that 50% of people are overweight, and 15% of adults and 30% of children between 7 and 9 years of age are obese (DGS, 2006; Carmo et al, 2006); if no serious action is taken these numbers will rise to approximately 50% by 2020. Noticeably, people do not walk to work or walk to go shopping, people walk in walking machines in closed environments which act as new social arenas.

[5] This is the result of having to wait for parking space at the university car park. In peak hour, this wait can be up to 30 minutes.

[6] Tennis or basketball courts painted on car parks are not such an uncommon feature in the United States.

[7] Isetta was a successful Italian design European made car (or microcar) introduced in 1953 and later produced by BMW. With only 228 x 168 centimetres, and a frontal door (dash and steering wheel are hinged at the front door), Isetta allowed parking sideways, something valuable nowadays due to the lack of space in many urban areas. Unfortunately this practical design was totally abandoned. More recently, a joint partnership between Mercedes-Benz and Swatch produced the Smart, an 'ultra urban car' that started to be produced in 1998 in France. With over 800,000 cars sold in 36 countries, the Smart is being introduced in 2008 in the US. Yet, it less than a decade it has already transformed the way people relate to the cities, notably Rome and Berlin.

[8] See Sheller and Urry's (2006) analysis on the airport as a place with a specific contingent materiality, with a considerable social complexity.

[9] There are experiences in Denmark and Holland that illustrate how these material objects related to traffic can be removed, increasing the safety of people (there is a distinction between public realm and traffic zone. The first one is a multi-functional, diverse, culturally defined, personal and unpredictable zone; the second one is a single purpose, uniform, regulated, impersonal and predictable space).

[10] Partially we can trace this idea, although not the process or purpose, to Wilshire Boulevard in Los Angeles, a 16 mile long avenue, designed in the 1920s. In an epoch that still conceived of shops in pre-motorised terms, a developer named A. W. Ross, invested in a model which put parking lots at the back

of the shops, where people could enter from the back, and where display windows gave directly onto a conventional sidewalk. Over eighty years ago, a one-mile shopping street where one drives for pleasure was created.

[11] In some cases an attempt to downgrade these roads by creating bypasses, may allow to furnish them with the infrastructures that 'true' urban streets need – pedestrian sidewalks, parking places, trees, lighting, and so on. In other situations an increase in occupation densities along these axes can permit to introduce an efficient public transport system. Yet, if the car is already there, it is a problem quite difficult to overcome.

[12] Through a in-depth study Dowling concluded not only that suburban mother's travel is complex and that the car is not only understood as a convenience (to travel to paid work, to drive the children around and to keep a household running), but also that it plays a significant role in a complex interplay of values and their associated activities. More culturally aware research of the motor vehicle use can unveil important issues of the contexts in which young single women engage with the car, as well as other groups

[13] O sonho dos meus amigos é ter um GTI; não importa de que marca de que cor; o sonho dos meus amigos é ter um GTI; não importa se inglês ou japonês.

[14] In this context it is interesting to refer that students from the course 'Urban Planning and Management' of the Geography and Planning degree at the University of Minho have been studying the significance of Ryanair in changing travel patterns in the north of Portugal using mobile methodologies such as observing and intervieweing people on the route Oporto-Liverpool, both on the ground and on-air.

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