

# Automobile Politics

## Ecology and Cultural Political Economy

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importantly) that they produce and depend on a history of the rise of the car in these individualist terms which simply bears very little relation to the historical record.

As the authors' ideological underpinning of the backlash against anti-car sentiments fails to either explain the rise of the car adequately, nor to justify morally why no restrictions on car use are legitimate, the arguments presented in chapter 2 come back into the frame. One of the interesting things about the backlash writers is that they rarely address the concrete claims made by the car's critics, and thus have no basis for refuting the basic challenge to a car-dominated society. Their arguments for cars as extension of human freedom fall back onto lumpen 'I want my SUV' pleas and knee-jerk reactions such as destruction of speed cameras, recalling Kunstler's 'freedom of a fourteen-year-old child'.

If automobility is at least potentially unsustainable and thus in need of some sort of transformation, then we need to take seriously the question of why cars have become so dominant in societies across the globe. Chapters 4 and 5 address this question in more detail, and demonstrate that the hyper-individualism which underpins the arguments discussed in this chapter is completely unpersuasive.

## 4 | *Automobile political economy*

As seen in chapter 3, the pro-car arguments of Dunn and Lomasky, as well as those seen in more general political discourse, rely on an assumption that cars have become dominant principally through the separate and combined choices of millions of individuals to purchase and use cars, move to the suburbs and so on. Such choices reflect a strong desire for freedom which Dunn and Lomasky both argue is extended by car use. But this raises the question: is this implicit history of the car's rise persuasive? This chapter and chapter 5 show that it is not. This chapter shows that the rise of the car is better explained in terms of an intertwining of the particular developments of capitalism in the twentieth century while chapter 5 focuses on the production of particular types of individuals attuned to constant mobility.

### Introduction

This chapter proceeds from the proposition that to explain the rise of the car it is useful to think in terms of *political economy*. Specifically, it is the relationships between automobility and economic growth (or capital accumulation<sup>1</sup>), those between economic growth and the state and the appropriate ways to theorise such relationships, which enable a

<sup>1</sup> Economic growth and capital accumulation are not strictly the same thing, although they are clearly related. Strictly, from the perspective developed below, capitalism entails the relentless pursuit of accumulation by capitalists – that is, the turning of investments in commodities into profits and into further investments (and consumption by capital), while economic growth refers more conventionally to the aggregate increase in the money throughput in the economy (gross domestic product, GDP). While in some contexts it is important to distinguish more carefully between the two for present purposes this is not important, and I use the terms interchangeably. For an elaboration of the importance of the distinction in relation to climate change policy, see Matthews and Paterson (2005).

more adequate account of why cars have become so dominant. Across a wide range of political/economic discourses cars have been seen to play a fundamental role in the promotion of economic growth in the twentieth century, and thus in the reproduction of capitalism as a system. Proponents and social critics argue that both in terms of its direct stimulating effects on the economy and the broader political/economic shifts effected because of the motor industry's role in reorganising industrial production ('Fordism'), the car has been central to promoting growth. This role has therefore been crucial in legitimising the car's expansion, enabling the car to become perhaps *the* symbol of progress for most of the twentieth century.

I traverse three broad sorts of approaches to this question. I start with those which rather take for granted the relationship between cars and growth, that tend to 'naturalise' it. They discuss it in a way which leads them to the conclusion that, in Overy's words, the rise of the car 'needs little explanation' (1990: 57). These approaches (principally those of neoclassical economics as reflected in history and business studies, modernisation theory in development studies and 'realist' IPE) can be seen as connected to those of Lomasky and Dunn discussed in chapter 3, although without necessarily having the same explicit political project. I then move to accounts which take more seriously both the political and the historically contingent character of the connections between cars and growth. This approach serves better to explain the growth of the car as a feature of a particular pattern of capitalist development. But while it gives us the resources to do this, these accounts, coming out of various versions of Marxist political economy, tend (reasonably enough) to pose questions about the character of a historically specific form of capitalism and can be pushed further in order to explain specifically why it is that this form favoured cars over other transport modes. In my third section I thus try to do this by making the connection between this sort of political economy and state theory to show that as a consequence of the car's importance to capitalist development for most of the twentieth century (and into the twenty-first), states have systematically promoted cars over their competitor modes.

### Liberal/economic discourses

It is a commonplace to observe the sheer size of the car industry. In the middle of the twentieth century business management analyst Peter

Drucker wrote that: 'the automobile industry stands for modern industry all over the globe. It is to the twentieth century what the Lancashire cotton mills were to the early nineteenth century: the industry of industries' (Drucker 1946; Dicken 1998: 316). Car manufacturers have for much of the twentieth century been high in the list of largest corporations in the world, with General Motors (GM), Ford and Toyota near the top of the list.<sup>2</sup> In industrialised countries, the car industry accounts for around 13 per cent of GDP (Maxton and Wormald 1995: 3). While for the most part this is evidence of the economic and political importance of these firms and the people they employ, at times stronger claims are made in terms of the way that cars create growth (not least by the industry's lobby organisations – see AAM 2001 or Institute of Labor and Industrial Relations *et al.* 2001). In other words, the connection to growth is not just perhaps that the production of cars has made some firms very large because of the demand for cars and the concentration of market share in a small number of firms.<sup>3</sup>

It is also, however, a commonplace to observe relationships between transport and economic growth, and even more specifically cars and growth. In statistical analyses, for example, a relationship between various aspects of transport consumption and GNP *per capita* is commonly noted. OECD reports observe this sort of relationship (e.g. OECD 2003), as do numerous studies by national government bodies. An influential report by the UK government's Standing Advisory Committee on Trunk Road Assessment (SACTRA) in 1999 details the close fit between GDP growth and transport use in general, but specifically the growth in car use (SACTRA 1999: 23–4).<sup>4</sup> Dimitriou (1990: 56) reproduces a World Bank study (1986) showing a close fit between *per capita* incomes and levels of car ownership across the world. Rae (1971: 101) and the AAM (2001: 11) give similar relationships between vehicle miles travelled and GNP in the United States. This is sometimes interpreted in terms of increased car consumption

<sup>2</sup> Many of the others are, of course, oil companies, closely related to the car industry.

<sup>3</sup> Dicken reported in 1998 that 71 per cent of sales world-wide were concentrated in ten firms, and there have been mergers since then which increase this concentration. See Dicken (1998: 316, 335).

<sup>4</sup> OECD (2003), for example, uses the SACTRA analysis and generalises its implications across the OECD countries. For other expressions of this assumed relationship, see Chatterjee *et al.* (2003: 15–18).

following economic growth – as people get richer, they are more likely to buy a car (e.g. *Economist* 22 June 1996, Survey: 4) and as a consequence car sales fluctuate with business cycles (e.g. Brown *et al.* 1979: 18). But it is often argued or asserted that the causal relationship also works the other way round: that the production and consumption of cars has helped to accelerate growth. ‘Automobility was the driving force behind Coolidge prosperity, and the boom of the 1920s was shattered with the saturation of the market for new cars after 1925’, writes James Flink (1975: 167). The (1999) SACTRA report presents a model of the way that traffic growth affects economic growth which has become widely used in other governmental and intergovernmental studies (for example, in OECD 2003: 13–14). In this model, provision of transport infrastructure produces a number of effects, including improved labour supply, expansion of markets and increased traffic volume, which then create positive externalities across the economy, improvements to productivity, growth of fixed capital *per capita* and technical innovation, which combine to produce growth in GDP *per capita*.

The debates concerning transport and developing countries also reflect this argument. Car ownership is expanding much faster in developing than in industrialised countries, partly reflecting saturation in the latter group (Lowe 1990: 7–8; Dimitriou 1990)<sup>5</sup> and partly the assumption that increased vehicle ownership is related to increased incomes (World Bank 1986; Dimitriou 1990: 17, 53), but also reflecting cultural assumptions concerning connections between transport and development. Modernisation theory, the dominant approach to development practice in the post-colonial period, has routinely assumed a linear relationship between transport growth and development. Although there has been a shift from assuming that transport growth leads directly to economic development (understood to mean GNP *per capita* growth) towards assuming only that transport creates permissive conditions for growth (Tolley and Turton 1995: 76; Hoyle and Smith 1998), a strong connection is still assumed both in academic studies of transport in economics, geography and sociology and by transport planners (Simon 1996). The pervasive assumption in both

<sup>5</sup> Dimitriou also suggests (1990: 52–3) that the increase in car ownership in developing countries was stimulated by aggressive marketing techniques by car manufacturers in the early 1980s because of reduced demand in industrialised countries as a result of the recession and general saturation of markets.

such circles is that as countries move up the development ladder cars become the favoured transport mode because of its flexibility and associations with personal freedom.<sup>6</sup> *The Economist* illustrates this assumption in its most crude form, writing that ‘whenever income per head in a country reaches around \$6,000 a year, car sales rise steeply’ (*Economist*, 22 June 1996, Survey: 4). The way that the relationship between cars and growth is often characterised can be divided into three elements, which collectively have enabled an acceleration of production and consumption: technical innovation, the flexibilisation of mobility and the extensiveness of forward and backward economic linkages.<sup>7</sup>

### Technical innovation

It is principally technical change in the production process (not the cars themselves) that has been regarded as important (e.g. Maxton and Wormald 1995: 11; Ross 1995: 19). The development of the assembly line, the intensified division of labour, the mechanisation of increasing numbers of tasks and then later flexibilised production, just-in-time (JIT) delivery, robotisation and so on all led to productivity gains which meant that prices could be radically reduced and thus more widespread consumption enabled (e.g. Dicken 1998: 325). ‘Twice in this century it [the car industry] has changed our most fundamental ideas of how we make things’ (Womack *et al.* 1990: 11). Ford’s introduction of the assembly line, for example, fully developed by 1913, reduced the price of a Model T Ford from \$825 in 1908 to

<sup>6</sup> The studies just cited all note how car ownership in developing countries is concentrated in the relatively high-income Newly-Industrialising Countries (NICs), and make the connection to a relatively high income in such terms. Countries also promote the car over its alternatives in order to promote an emerging indigenous car industry – as, for example, in China’s attempts to restrict bicycle use in Beijing to enable faster movement by car, as noted in chapter 1 (Chu 1998).

<sup>7</sup> I exclude discussion here of the direct public provision of transport infrastructure which figures highly in SACTRA (1999) or OECD (2003). Transport infrastructure provision is considered both a direct contribution to economic growth (spending by the state directly increases GDP) and a permissive condition for growth through the way it makes transport of goods, services and consumption of transport itself possible. In the latter sense (perhaps also the former, but the link is less clear) infrastructure provision may be thought of as a special instance of the extensive forward and backward linkages of transport, in particular cars, on which see below.

\$290 in 1926 (Maxton and Wormald 1995: 68–9). The car industry also stimulated technological innovation in related industries such as steel and petroleum (Flink 1975: 140–1).

### *Flexible mobility*

Cars produced a form of mobility which enabled people to move around in a significantly more flexible manner than had been previously possible. '[T]he freedom of personal movement conferred by the automobile and the surfaced road has been a major contributor to economic growth' (Rae 1971: 107) principally because of the way this increased flexibility created the possibility for trips and thus business opportunities both for those who have wider travel options and for those who might sell goods and services to the automobile. 'Historically, railways provided the pioneer transport arteries in many world areas, but over time roads have proved more flexible and more competitive as well as providing more convenient door-to-door transport' (Hoyle and Smith 1998: 15). This significantly reduced costs of goods and services (Hoyle and Smith 1998: 33–4) and, as Flink (1975) notes, a wide range of people – doctors, insurance agents, clergymen, farmers, school supervisors and so on – experienced increases in incomes and/or efficiency as a consequence of car ownership (Flink 1975: 160).

### *Forward/backward linkages*

The development of the car industry has had particularly extensive forward and backward economic linkages. Investment in a car simultaneously presupposes a range of backward linkages – in steel, aluminium, oil, rubber, plastics, lacquers, glass, construction, lead, platinum (to name just some of the more important) – and entails or creates an even wider range of forward linkages – filling stations, tourist cabins, trailer parks (Dunn 1998: 26–7), insurance, health care, advertising, maintenance (of both cars and roads), spare parts, legal fees, in-car gadgets and so on. A banal example is instructive. Flink (1975) quotes a New York City health commissioner writing in the magazine *Motor* in 1922: 'do you realize, that without the motorcar golf could never have become the popular game that it is today' (1975: 166). The investment in cars or associated activities helped to stimulate activity across great

swathes of the economy, even without considering the dynamic effects: if one includes the process of suburbanisation as an 'effect' of the development of automobility, then increased highway construction (which was the second largest US government expenditure in the 1920s) and the suburban real estate boom (with associated investment in sewers, telephones, electricity provision, schools, shopping malls, etc.) all become part of the knock-on economic consequences of the emergence of the car (Flink 1975: 140–1; see Rae 1971: 101–7).

For much of the twentieth century, then, the motor and associated industries (oil, steel and construction, in particular) had growth rates noticeably above those for the economy as a whole. A fairly common assessment would be along the lines given by Overy:

The motor and aviation industries have both contributed to sustaining high levels of economic growth and technical change at a vital period in economic development, when the technical and market possibilities of the first industrial revolution were reaching a climactic point. (Overy 1990: 71)

To observe these relationships is important; however, what most writers tend to do is to 'naturalise' the car's relation to growth – to render it an objective fact outside political agency. Cars just appear to have grown in a more or less autonomous, haphazard manner, principally because of the actions of either business geniuses such as Ford or Sloan (of GM), or millions of (American) consumers 'choosing' cars over their alternatives. This naturalistic tendency is particularly pronounced among economists or business historians. Overy (1990), for example, argues that 'the reception and rapid evolution of the motor vehicle ... needs little explanation' (1990: 57). The way writers often discuss the (usually American) 'love affair' with the car reinforces such naturalistic notions (e.g. Davies 1975: 7; Flink 1975: chapter 1).

Hoyle and Knowles (1998) reflect this tendency well. They conflate the historically specific patterns of, and tendency towards, enhanced mobility in the nineteenth and especially twentieth centuries with an ahistorical account of 'human needs':

The study of transport rests essentially on two cardinal principles. The first is that *mobility is a fundamental human activity and need*. 'When the history of the late 20th century is written, there seems little doubt that mobility ... will be one of its touchstones'. (Hoyle and Knowles 1998: 3–4, quoting from Johnston *et al.* 1995: 13)



So, as with Lomasky, mobility is simultaneously a feature specific to the way we might characterise a particular age and a timeless aspect of human needs. As a consequence, the shift from one transport mode to another over time is presented effectively in teleological terms, as a succession of modes to a 'final stage' where the automobile 'which offered a greatly improved alternative to either bus, streetcar or rail' is the pinnacle of achievement in urban mobility, in much the same way as conceptualised by Dunn or Lomasky (Hoyle and Smith 1998: 25).<sup>8</sup>

This tendency explains the rise of the car in terms of the natural advantages it has over other forms of transport and the way it taps into powerful forces in human psychology. Maxton and Wormald (1995) indulge in some bizarre psychologising:

The truth is that our attachment to cars is profoundly rooted – not only in the practical necessities of life but also in our emotions. Research shows that there is a deep psychic connection between freedom and movement. Babies achieve locomotion. Adults re-experience it through the motor car. Waiting for a bus or a train unleashes hidden, unconscious fears of abandonment in many. (Maxton and Wormald 1995: 33)

### Economic nationalist IPE

When cars appear in discussions of IPE the legacy of this understanding of the relationship between the car and growth is strong. Discussions of the car industry within IPE tend to focus on two themes. First, there is a concern to explain the changing spatial organisation of the car industry, reflecting broader concerns with shifts from 'national' to 'international' and more recently from 'international' to 'global' economies. The car industry is often taken as a paradigm case of a globalised industry (Dicken 1998; Held *et al.* 1999: 262–3). Dicken emphasises how the car industry was organisationally one of the most globalised of all manufacturing industries and had transnationalised early. Ford and GM had set up plants abroad during the 1920s and by 1994, for example, 57 per cent of Ford's production was taking place outside the United States. Over 40 per cent of the production of the largest car manufacturers is outside their 'home' country (Dicken 1998: 316–18,

<sup>8</sup> That this citation is from an undergraduate textbook should not be taken as a weakness in the argument here; it is a key site where 'received wisdom' is passed down to a new generation of transport planners.

335–6); although a substantial majority of final car assembly is still carried out in 'triad' countries in North America, Japan and western Europe, 20 per cent is now outside that area and component manufacture is even more widely spread (Dicken 1998: 319).<sup>9</sup> Car companies have been highly innovative in relation to emerging forms of interfirm alliances as a response to the increased competitiveness pressures associated with globalisation (Dicken 1998: 337–8). These 'various types of joint venture' include 'equity, vehicle swapping, manufacturing and assembly, parts swapping, engineering and design, and distribution' (Munkis *et al.* 1993: 628).

Secondly there is a concern to explain this spatial distribution of production facilities in terms of government policies. A successful car industry was in the twentieth century widely taken to be a necessary condition for a successful economic development strategy (Dicken 1998: 316). Many states established various forms of protection to ensure the dominance of the domestic car market by domestic firms and several created nationalised car companies as 'flagship' industries. The changes in production techniques and labour relations collectively known as 'Fordism' laid the foundation for the projection of US global power in the mid-twentieth century (Rupert 1995). Within a globalising economy, the imperative for governments to compete to attract investment is taken as a background of this concern.

There is often a clear connection in this literature to normative policy-making concerns with how 'we' (nationally understood) promote 'our' car industry, as well as a concern to evaluate (and often emphasise) the role of the state under conditions of globalisation. Reich (1989), for example, shows that the success of 'national' car industries is dependent primarily on the degree of access to the domestic market which overseas producers have, and the varied types of support given to domestic firms by the state (Reich 1989, 1993; Plumstead *et al.* 1993; Kawahara 1997; Dicken 1998: 330–2). Gradually, as the economy has globalised, most countries have disbanded nationally owned or otherwise systematically favoured car companies in favour of opening up markets and simultaneously providing inventive packages to attract investment from transnational firms. Such incentives include various

<sup>9</sup> Indeed, at times, a process of 'continental' integration is analysed as opposed to globalised integration (e.g. Molot 1993a) – but the logic is ultimately the same, only the scale differs.

forms of tax breaks as well as state investment in infrastructure for the factory concerned (Dicken 1998: 271–2). In extreme cases, the value of the subsidy provided by states to get investment far outweighs its direct employment benefits (illustrating the importance of forward/backward linkages, as suggested above). In one case, Dicken (1998) reports that Alabama offered the equivalent of \$167,000 per job created to attract a Mercedes-Benz plant in 1993 (1998: 272). Transnational firms have also worked to re-present themselves as ‘insider’ firms to overcome the legacy of nationalism in the car industry, the paradigm being Japanese firms in North America (Eden and Molot 1993). One final concern often raised in these debates is that of the position of developing countries – whether or not it is possible for developing countries to emulate industrialised countries in developing a car industry, or how they might develop other policy tools to promote such an industry (Gwynne 1991; Maxton and Wormald 1995: 132–41).

This form of political/economic discourse is the dominant one in political representations of the car industry, with anxiety about employment, investment and economic performance all being prevalent. These routinely intertwine debate about the success of individual firms, the system-wide problems of the industry (notably persistent overproduction) and those of national economies (e.g. Kalawsky 2001). Witness the debates in the United Kingdom over the perennial crises of Rover, being sold to BMW in 1994, downsized by BMW, sold by BMW, with Ford picking up profitable Land Rover, the rest reverting to a UK-based group of investors in 2000 and then going into receivership in April 2005. In all of these episodes a series of concerns framed in nationalist terms about productivity and competitiveness, employment, management versus unions (both as a narrative within the events and as competing explanations for Rover’s woes) is prevalent. When Rover was sold to BMW the moral panic was that there was no longer a ‘British car industry’ left, a general concern over the competitiveness of the ‘British’ economy and so on.<sup>10</sup> Similar crises and concerns can be seen in recurring crises of car firms around the world – Chrysler, from at least the 1979 bailout onwards, Fiat, Volkswagen, Volvo, Saab,

<sup>10</sup> At times, this is overlaid with localist concerns – in Rover’s case, in the West Midlands in particular. But whatever the spatial scale, the logic is the same – of increased competition between places in a global economy and a concern to protect jobs and investment in a particular place.

Renault – even GM worrying about when Toyota will overtake it as the world’s largest car maker.

While it is not surprising that this sort of discourse is prevalent in a broader political arena it is perhaps more surprising how dominant it is in academic discourse about the car industry in IPE. Maureen Molot’s edited volume *Driving Continentally* (Molot 1993a) stands as a paradigm case, as does much of her more recent edited AUTO21 volume (2003). Both stem from large conferences involving academics, car industry people and government officials. Molot begins her introduction to *Driving Continentally* with the assertion of the ‘enormous importance [of the car industry] to the economies of Canada, the United States, and Mexico (Molot 1993b: 1). The overall concern is with the fate of the industry based in North America in the face of continental integration (both political and corporate), intensified competition (especially from Japanese firms) and emerging pressures such as environmental regulation. This literature in general assumes the centrality of the car industry to national economic success; it then focuses on government policies (and shifts in them) to channel investment into the car industry, to protect national industries, etc. There are some obvious limits to the nationalist agenda. From my perspective here the central one is that it does not really explain the relationship between cars and economic growth: rather, it assumes such a relationship exists and looks at one of the consequences. As Molot states, within this mode of analysis, such a question would appear redundant: ‘that the economic viability of the auto industry has a direct impact on the overall health of each of the North American economies is to state the obvious’ (1993b: 4).

The focus on national strategies in an international/global economy has generated much attention on the relationship between such national strategies and economic integration on a world, regional, or bilateral basis. The potential conflicts between regional or bilateral schemes and multilateral ones, as in analyses of the Auto Pact between Canada and the United States (Donaghy 1998; Anastakis 2000), or of the North American Free Trade Agreement (NAFTA) (Weintraub and Sands 1998) have been considered. These often generate specific contexts for such interstate competition for locational advantage and, as knock on consequences, generate rules (mostly involving harmonisation of standards) designed to level competitive playing fields (most work here is on NAFTA and the European Union (EU), see various

chapters in Molot 1993, especially Holmes 1993; see also Weintraub and Sands 1998; Freyssenet *et al.* 2003). The environmental features of such integration schemes are prominent and are often stress environment/economy conflicts. The MMT case is a paradigm example and the debate in the EU over catalytic converters in the late 1980s and early 1990s was similarly important (Arp 1993; Kirton 1998). In the former, the US company Ethyl Corporation successfully sued the Canadian government in 1998 under the provisions of chapter 11 of NAFTA for the latter's ban on the former's gasoline additive on grounds of health and environmental impacts, gaining compensatory payments and an overturn of the ban (Kirton 1998). In the latter, there was a fierce debate in the EU between advocates of catalytic converters and those of lean burn engines in the late 1980s and early 1990s, which turned as much on whose car industry had a strategic advantage in one or the other (the United Kingdom versus Germany, principally) as on the environmental benefits of each (Arp 1993).

### Regimes of accumulation

While these arguments concerning the importance of cars to growth are a useful starting point, they remain partial. It seems to me more fruitful to start with Marxian political economy, particularly combinations of regulation theory and neo-Gramscian IPE as well as a little dose of Schumpeter to illustrate and explain the centrality of cars to growth. It is not just a matter of certain features of cars (as, say, in Overy's account – e.g. the forward/backward linkages point) but the presence of a whole 'regime of accumulation' in which cars (both their production and consumption) have figured centrally.

Some of the historians of cars, or commentators on the car industry's problems in the 1970s, get part of the way here. Flink (1975), for example, has a subtle appreciation that the development of the car in the 1920s and 1930s in America relied simultaneously on the expansion of productive capacity through massive capital investment (both private, in manufacturing capacity for cars as well as steel, oil, rubber, etc. and public, in roads and improved surfaces) and consumptive capacity through credit creation and so on. Flink also recognises that the specific patterns shift over time – for example, showing that the massive capital investment in the 1920s generated growth in that decade but that in the 1930s this could not be sustained and

growth instead shifted towards planned obsolescence (Flink 1975: 174). Rothschild similarly emphasises that the development of the car depended not so much on people's 'innate' desire for cars as on 'the sustenance of social and institutional partiality. Such support provided roads, a favourable tax structure, a dispersal of cities and jobs. It encouraged the decay of alternative modes of transportation, and suspended rational calculations of the costs of auto development and auto waste' (Rothschild 1973: 245). Protesters against the car also often understand the political economy here, as noted in chapter 2. John Tyme (1978) provides a good example of how the growth of cars stems from a 'technological imperative' which guides the age – consisting of the technology itself, the industrial/financial complex which promotes and profits from it; a lobby organisation which promotes the interests of the industrial bloc to governments; an 'interest section' in the relevant government department, predisposed towards the lobby; a body of expertise dependent on the industry for their careers; and a 'brainwashing organisation, loosely staffed by hack economists' whose job it is to 'establish "economic truths"' in the interests of the imperative (Tyme 1978: 93).

But a political economy which has its origins in Marxism allows us to emphasise the way in which capital accumulation requires the success of particular industries (which may change over time) and the way in which the state is structurally impelled to intervene to promote the pursuit of continued accumulation and thus to promote key industries. I show how the specific material practices involved in the car are organised as part of the ongoing reproduction of capitalist societies and are increasingly organised transnationally rather than simply within national borders. But, at the same time, the car industry is not simply something which has been organised through capitalist enterprises; it is an industry which has been seen ubiquitously as a key industry in ensuring continued accumulation.

It is necessary at this point to go 'back to basics' to clear the ground for what follows. Central to all accounts of capitalism from Marx onwards is that, as a social form, capitalist society is defined principally by a combination of the specific commodification of human labour – the emergence of the wage form as the principal means by which most people meet their subsistence needs – and the way that capitalists face each other in competition in the marketplace. These



fundamental features create a number of conflicting consequences. First, they generate endemic class conflict as wage labourers and capitalists with antagonistic interests face each other. Second, the interests of individual capitalists and those of capitalists collectively are in conflict with each other. Individual capitalists tend to want to keep workers' pay to the minimum necessary to enable the reproduction of their labour power while collectively capitalists (at least once the productive capacity of society has got beyond the point where all production can be consumed by a minority of the rich) increasingly need wages to rise to facilitate consumption of industry's products. A tendency for underconsumption/overproduction is thus built into the structure of capitalist society. This tendency is used to explain the boom/slump cycles endemic to the history of capitalist society; at various points in a business cycle it produces a crisis of overproduction, an inability to realise profits and a recession which shakes out productive capacity and 'surplus labour' until profits can again be realised. A third feature of this dynamic is that capital attempts to substitute labour for machinery in order to realise increased profits by reducing wage bills. This is one of the principal reasons why capitalist society is so enormously dynamic as a system, but it also exacerbates underconsumptionist tendencies through unemployment and depressed wage levels as workers compete not only with each other but also with machinery. Finally, the modern state has emerged as a political institution which attempts simultaneously to secure the rule of capital (through the principal institutions of private property and contract, as well as through specific laws to discipline labour and occasional violence and repression), to manage class conflict and to secure the conditions under which accumulation might continue reasonably smoothly – specifically through intervention to mitigate the problems caused by capitalism's underconsumptionist tendencies.<sup>11</sup>

It is at this point that the branch of Marxism known as 'regulation theory' enters the picture.<sup>12</sup> At least for present purposes, regulation

<sup>11</sup> As well as skirting many controversies, this brief account of Marxist political economy draws on a huge literature. For two accounts similar to that shown here, see Held (1987: chapter 4) or Harvey (1990: 121–41).

<sup>12</sup> The account here draws principally on Aglietta (1979, 1998), Boyer (2004) and useful reviews by Jessop (1990), Amin (1994b) and Dunford (2000). Other key works in regulation theory are Boyer (1986) and Lipietz (1987).

theory focuses on the means by which capital attempts over long periods of time to mitigate underconsumption. The more general premise of regulation theory is that neoclassical economics fails to understand that social institutions are necessary conditions of the continued reproduction of capitalist society. 'Regulationist research insists on the fact that the market relation, and therefore its expression in markets, results from a *social construction* and not from the information coming from the spontaneous confrontation of economic actors' (Boyer 2004: 17, my translation). 'The essential idea of *A Theory of Capitalist Regulation* is that the dynamism of capital represents an enormous productive potential but that it is also a blind force. It does not contain a self-limiting mechanism of its own, nor is it guided in a direction that would enable [it] to fulfil the capitalists' dream of perpetual accumulation' (Aglietta 1998: 49). But at the same time, regulationists resist the idea, which they suggest most Marxists hold to, that capitalism's basic principles (wage labour, commodity production) determine a singular path of development; social institutions thus create historically and spatially specific patterns of growth (e.g. Boyer 2004: 17).

These specific patterns are termed 'regimes of accumulation' in regulation theory. They refer to the historically specific way in which surplus value is extracted and realised and a long-term model articulated which creates a general consistency between conditions of production and 'the conditions under which production is put to social use (household consumption, investment, government spending, foreign trade)' (Lipietz 1992: 2; for a similar definition see Amin 1994a: 8). But these regimes do not arise spontaneously, nor do their inevitable contradictions resolve themselves. Specific regimes of accumulation also entail particular modes of regulation which are referred to as the socio-political institutions and ideologies through which capital attempts smoothly to reproduce a specific regime of accumulation, the 'mechanisms which adjust the contradictory behaviour of individuals to the collective principles of the regime of accumulation' (Lipietz 1992: 2; Aglietta 1998: 44). These elements are not simply to do with state intervention or regulation, narrowly understood; they entail 'a wide range of areas, including the law, state policy, political practices, industrial codes, governance philosophies, rules of negotiating and bargaining, cultures of consumption and social expectations' (Amin 1994a: 4).

### Fordism and after

Although other regimes of accumulation, and their crises, can be identified,<sup>13</sup> regulation theory arose out of the economic crisis of the 1970s and took as its principal object of study the regime of accumulation known most commonly as Fordism, occasionally also as 'organised capitalism' (Lash and Urry 1987). Aglietta's *A Theory of Capitalist Regulation* (1979) was principally an investigation of how this regime was put together and maintained in the United States throughout much of the twentieth century. Fordism entailed an integrated (if not necessarily 'planned' in the conventional sense of the word) set of policies, practices and projects developed from the 1910s to the 1940s, and then fully integrated through to the 1970s, albeit with variants in different countries (Dunford 2000: 152, quoting Boyer 1996: 26–9). At its heart was a set of technical and labour organisational changes which enabled massive productivity gains, often known as 'mass production'. But such productivity gains and the mass production they enabled also went along with a set of social compromises which enabled the development of *mass consumption*, mass production's logical corollary. The first of these involved Taylorism (or the scientific management of work), increased mechanisation – in particular, through the development of the use of the assembly line – and the rise of managerialism to effect enhanced control over labour. Collectively these produced huge and ongoing productivity gains in the industries which adopted them from the 1910s through to the 1970s. But the second element, the mode of regulation, was just as important. This entailed first and foremost a shift in capital/labour relations where capital forwent a high rate of profit in order to realise higher absolute profits by increasing wages above the rate required for the physical reproduction of labour, and labour accepted enhanced managerial control in return for increased wages and acceptance (after a struggle) of unionisation. Its symbolic starting point was Ford's 'five-dollar day', started in 1914, but two other elements were key to the success of Fordism over time. One was

<sup>13</sup> Dunford (2000: 148) suggests that capitalism's history can be characterised by four periods of crisis with distinct regimes of accumulation between them. The four crisis periods are those following the post-Napoleonic war (both the first crisis of industrial capitalism and the last crisis of the *ancien régime*), the depression of the 1890s, the interwar crisis of 1918–39 and the crisis of Fordism starting at the end of the 1960s.

the emergence of what Aglietta calls a 'norm of working class consumption' (1979: 152): that workers had to be acculturated into a culture of consumption in order that increased wages would result in cycles of production/consumption necessary to sustain the regime of accumulation. It also entailed the emergence of the state as both a significantly increased consumer of goods and services directly (notably with the public works programmes in their New Deal/Keynesian and fascist variants in the 1930s) and as the agent with the key responsibility of managing labour conflicts, redistributing wealth to those not in work (again to enable the spread of consumption), stabilising aggregate demand at national levels (through Keynesian demand management) and negotiating the international tensions brought about through such nationalist economic management techniques at international levels (the Bretton Woods system after the Second World War).<sup>14</sup>

As we have seen above, many writers illustrate the centrality of cars in promoting growth from the early twentieth century onwards in relation to a number of specific features – forward/backward economic linkages, the acceleration and flexibilisation of mobility, the reorganisation of industrial production and so on. The regulation-theoretic account also enables us to understand these specific features as an integrated whole. At the same time, it enables us to revisit Fordism's central elements in the car industry as both paradigm example and principal 'driving force'.

That the car industry was central in such reorganisation/productivity gains is clear from its most commonly designated name – Fordism. Ross claims that 'the car is the commodity form as such in the twentieth century – "Taylorization" [the methods of rationalising work in factories central to Fordism] ... was developed in the process of producing the "car for the masses" and not the inverse' (Ross 1995: 19). Taylorisation involved the breaking down of production tasks into their simplest elements. Previously each worker had done multiple tasks, so that an individual worker could be said to have built a car. Instead, each worker would now do only one task, repetitively,

<sup>14</sup> This is inevitably a whirlwind overview of the principal elements of Fordism and glosses over debates and details. For fuller accounts, see Aglietta (1979), Lash and Urry (1987), or Harvey (1990: 121–200). On the interpretation of the relationship between Keynesian management and Bretton Woods given here (the latter is often overlooked in accounts of Fordism), see Ruggie (1983) or Leyshon and Thrift (1997: 59–82).

throughout the day, and the car would be built by the work team as a whole. As introduced by Ford this involved the use of the assembly line where the car in production would be moved mechanically around the factory; each worker adding their part as it passed them. This method of production greatly increased worker productivity and thus reduced prices for the finished products.

But this reorganisation and mechanisation of work and worker/manager relations needed to be managed politically. The car industry became one of the principal sites of labour disputes and disputes over unionisation (e.g. Rupert 1995).<sup>15</sup> The productivity gains enabled by Fordism produced deep struggles over how they should be distributed. It was struggles in the car industry above all which had produced by 1945 the key elements in the Fordist class compromise involving recognition of union rights, full employment policies, the 'family wage' principle underlying wage rates and so on. This in turn enabled the spreading of consumption across much broader segments of the population and the thirty years of unprecedentedly high economic growth across the western world from the mid-1940s to the mid-1970s.

But cars were not only important in terms of their role in transforming production relations; they became one of the principal consumption items around which the consumption side of the equation was structured. Fordist consumption 'is governed by two commodities; standardized housing that is the privileged site of individual consumption; and the automobile as the means of transport compatible with the separation of home and workplace' (Aglietta 1979: 159; cf. Freund and Martin 1996: 8). Through the relation of these two, the processes of urban spatial change – in particular, suburbanisation – thus becomes integral to the success of Fordism as a regime of accumulation. Consumption of cars becomes the process of commodification through which other consumption (houses and the things to put in them) is thus

<sup>15</sup> Indeed, if we look at the field of study known as industrial relations it is hardly too strong to say that it was almost exclusively founded and developed on the back of studies of the car industry, or on conceptual tools drawn from that study. The classic study is Braverman (1974). The literature on industrial relations in the car industry, practically all of which proceeds from this premise about the management of labour relations as part of the development of Taylorism, and more recently of 'flexibilisation', is enormous; for a small selection, see Tolliday and Zeitlin (1986); Law (1991); Jürgens *et al.* (1993); Deyo (1996).

enabled, and which occurs in a manner which starts off appearing as 'freedom', but increasingly becomes a necessity.

As means of managing capitalism's internal contradictions, regimes of accumulation and modes of regulation are able to stabilise growth for only a period of time. Fordism started to come under pressure from the late 1960s and as a regime of accumulation it is usually seen as exhausted by the mid-1970s. At the heart of the crisis were slowdowns in the productivity gains produced by the Fordist combination of high wages, strict labour discipline, the assembly line and Taylorism. At the same time, enhanced international competition (in part because of the Bretton Woods system, one of Fordism's regulatory elements) placed competitive pressures on firms and downward pressures on profits. By the 1970s many western economies were experiencing the contradictory phenomenon of *stagflation*: simultaneous economic stagnation (as investment and output stalled and unemployment rose) and inflation (with prices rapidly rising). The oil crisis of 1973–4 helped to prolong the problem.

The 1970s and 1980s saw a series of debates about how to characterise what was emerging as a response to the crisis of Fordism. Various prefixes (neo, post, *après*) were added to Fordism to indicate the relationship to what had gone before and the transformations in the way the political economy operated. Others preferred a terminology invoking a distinct break from Fordism – 'the second industrial divide', 'flexible accumulation', 'flexible production', 'disorganised capitalism', 'New Times' were all proposed. For some the crisis was contained within the organisation of production and had to do principally with technology and labour relations (with differing emphases on each element); for others it was a crisis simply of Keynesian economics and economic management; while for others again (including regulationists), it was a crisis of the regime of accumulation as a whole.<sup>16</sup> Within the regulationist school (e.g. Aglietta 1998) there is a sense that no fully fledged regime of accumulation has successfully emerged to replace Fordism and as a consequence overall growth rates have been significantly lower than during Fordism's heyday and the global economy has

<sup>16</sup> For a useful survey of these debates, see Amin (1994b). For key contributions where these terms were articulated, see Piore and Sabel (1984), Offe (1985), Lash and Urry (1987), Lipietz (1987), Hall and Jacques (1989) and Harvey (1990).



been significantly more prone to recurrent crises. Nevertheless the years since the 1970s have been characterised by a search for such a regime; Harvey (1990) provides a useful starting point with his emphasis on the word 'flexibility'. The 'inability of Fordism and Keynesianism to contain the inherent contradictions of capitalism' which became evident during the 1970s, 'could best be captured by one word: rigidity'. As a consequence, 'flexible accumulation ... is marked by a direct confrontation with the rigidities of Fordism. It rests on flexibility with respect to labour processes, labour markets, products, and patterns of consumption' (Harvey 1990: 142, 147).

Asking questions about the transition from Fordism to post-Fordism can also serve to illustrate more fully the centrality of cars to both regimes of accumulation. First, car firms were at the centre of the crisis of Fordism, as both its problem and its solution. One of the elements in the crisis was enhanced international competition which placed downward pressure on profits, particularly noticeable in terms of US/Japanese competition. As we saw in chapter 2, one of the particular problems of the car industry – in fact, probably outstripping that posed by the critics of the car (on environmental, safety, or other grounds) in the day-to-day lives of US car executives – was the pressure on profitability produced by enhanced Japanese competition. At the root of this competitiveness was a distinct productivity regime in the Japanese workplace which enabled it to combine the economies of scale of the assembly line with flexibilities unavailable to US manufacturers. Japanese firms had been developing what became most commonly called 'lean production', sometimes 'Toyotism', since around 1960. Lean production entailed an attempt to continue to realise the economies of scale produced by the assembly line and Taylorism, but to strip out the rigidities and inefficiencies in mass production. In particular it involved the application of JIT principles throughout the industry. JIT refers to a way of organising an industry where everything arrives where it is needed 'just-in-time'; the principle is effected from supply of parts, to manufacture, to distribution of end products, with the result that many cars are in effect now not produced until they are ordered. JIT replaced older systems of planning which entailed, for example, manufacturers holding huge stocks of parts (with their associated costs) and were often vulnerable to running out of one part, as they did not intensively manage inventory. JIT thus significantly reduced the costs of holding inventory, reduced the risks of running

out and also enabled much swifter responses to changing market conditions, at the same time limiting problems of overcapacity. It also entailed significantly reorganised work practices, from individualised jobs on the assembly line to team working, an ideology of 'co-operation in place of conflict, leadership by demonstration rather than imposition, multi-skilling and appealing to individual creativity' (Maxton and Wormald 1995: 71–2). Japanese firms could then sell cars at highly competitive prices in US markets, even taking into account protectionist measures in place.<sup>17</sup> But flexibility was an additional and qualitatively important difference: Japanese firms were able to respond to changes in market demand much more quickly than their American counterparts.

So while the origins of Fordism are to a very significant extent in the development of the car industry, so are the origins of its demise as well as the rise of an alternative way of organising production. The implications of the Japanese challenge to US dominance in car manufacturing and the whole regulatory apparatus of Fordism were profound. Stagflation had as one of its causes the overproduction and enhanced competitiveness problems in car markets. Although most commentators looking back identify the crisis of the Bretton Woods system, in particular, the fixed exchange rate mechanism – with either declining US hegemony (Kindleberger 1973; Keohane 1984), the rising costs of the Vietnam War, or the emergence of the Eurodollar markets and the consequent downward pressure on the dollar (Helleiner 1994; Leyshon and Thrift 1997: chapter 2) – some contemporary commentators noted that 'Nixon at the time explained the devaluation of the dollar in terms of its adverse effect on people who wanted to buy foreign cars' (Rothschild 1973: 10).

Second, and perhaps more importantly for my concerns, what is often overlooked in discussions of Fordism – although it is discussed (if on the brief side) in Aglietta (1979: chapter 3 – is that Fordism was not only a series of innovations in production, to do with production technology, industrial relations, corporate organisation, state/firm relations, and internationalisation but was also a restructuring of

<sup>17</sup> There was a widespread view early on in the United States that the Japanese advantage was purely in terms of low wage rates. But car industry executives quickly knew that this was not the case. What was (and is) the case was that US firms expected significantly higher profit rates than Japanese (and European) firms (Flink 1975: 203).



consumption and the integration of the working class into capitalist society through such consumption. Aglietta emphasises that Fordism entailed a 'norm of working class consumption' (1979: 152) and that the key sites of such a norm were in housing and transport. Cars were thus central to Fordism through the stimulation of demand and the creation of a set of ideological mechanisms and consumer credit practices which served to close the circle between production and consumption necessary to secure a regime of accumulation.

We can revisit the question about the notion of 'post-Fordism' in this light. Implied both in the name and often more generally is the fact that post-Fordism signifies an eclipse in the centrality of cars. This narrative, however, suggests a different line. Within automobility's relation to Fordism are contradictions which help interpret both the unravelling of Fordism and the continued importance of cars. One central weakness in many approaches to post-Fordism (e.g. Amin 1994a) is precisely the positing of a 'break'. But when we focus even in a traditional manner on the organisation of production it is rather more useful to think of 'lean production', etc. as a *continuation* of the basic principles of Ford's innovative ideas rather than a break with them. Kawahara's (1997) account of the development of the Japanese industry, while highly ideological in orientation, is nevertheless useful here, as he shows that lean production arose in Japanese industries out of innovations within methods of mass production as transplanted from US firms in Japan, with the Japanese firms then simply working to improve the efficiency of the methods. In this sense car industries were still central in innovating in both the organisation of production and productivity gains and also in industrial organisation and labour relations (Kawahara 1997; Dicken 1998) in a 'globalising' economy.

But one can also think about the importance of automobility as one of the contradictions of Fordism itself, and the transition to post-Fordism as produced in part because of the unravelling of this contradiction. Take Harvey's classical account of 'flexible accumulation', for example. This is broadly centred on the production side of the 'regime of accumulation' (although there are some nods in the direction of consumption), and therefore suggests that the central 'break' is between rigidity (Fordism) and flexibility (post-Fordism). But, as illustrated already, the central 'competitive advantage' of cars at the consumption end, and thus their ability to generate accumulation, was always a question of 'flexibility' – they increased the flexibility

of many individuals' mobility and thus their ability to produce and consume services and create cycles of accumulation. Cars in this sense can thus be seen to play a part of an 'immanent contradiction' within Fordism, their flexible modes of transport and thus consumption (not just of themselves but of a whole range of other commodities) tending to breach the limits of a production regime based on rigidities. In other words, Fordism tended to become a limit to the realisation of the potential of automobility to produce limitless, mobile, accumulation.

Aglietta (1998: 56–7) also makes a similar argument when he suggests that one of the contradictions within Fordism was the way it encouraged individualism both through consumption and what elsewhere is called 'detraditionalisation' – in particular, through the emergence of large organisations as the principal sites of work – but that this individualism increasingly regarded such organisations as limits to its realisation. The events of 1968 are interpreted as the first major outburst of this contradiction, and the attempts in the 1970s by firms to 'make use of employees' initiatives' to enhance autonomy largely failed, with the consequence that 'productivity ran out of steam, inflationary pressures built up and the rate of profit declined' (Aglietta 1998: 57). The contradiction in automobility could be regarded as a specific instance of this tension, but I would make the stronger claim that it should be seen as its principal, and earliest, element. As in the principles of Sloanism which included the introduction of consumer credit systems, annual model changes, emphases on the importance of styling and aestheticisation, (Gartman 1994) and GM's intensified management of consumers through 'customer research' (Marchand 1998) are in this instance a corporate response to this tension.

Gartman (2004) neatly analyses this intertwining of production and consumption in the development of automobility. He suggests that there have been three principal cultural logics to the development of cars. In the first instance, cars seemed to cement and articulate class differences through ownership/non-ownership, craft-made/mass-produced and through a series of distinctions made by manufacturers, quintessentially GM (constructing a range of brands hierarchically from Cadillac 'down' to Chevrolet). But by the 1930s into the post-war period this logic was undermined by the working-class car consumption central, as we have seen, to Fordism. Workers were not

content with 'inferior' cars and the strict hierarchical logic of distinction became replaced with a mass-consumption logic, more consistent perhaps with that of Fordist production. But this always contained a tension between individuality and mass production which had produced by the 1960s a proliferation of styles and types of car – not organised hierarchically but increasingly according to 'lifestyle' logics – a 'postmodernisation' of the car market. Gartman's point is that each of these shifting cultural logics produces alterations in the production regime – the emergence of 'lean production', with changes in work practices and labour relations, is driven by desires to adapt to changing consumer tastes (themselves for Gartman driven by needs to escape alienation in the workplace). It is thus shifts in consumer practice, stimulated by shifts in class structure and class conflict, which then feed back to shape the particular character of the reorganisation of production. The problem of 'rigidity' which, in Harvey's view, is paradigmatic of the crisis of Fordism by the late 1960s, starts in the emergence of aestheticisation under Sloan, designed to respond to the problems of market saturation and working-class resistance to their status as being subjected to standardised, low-status cars. In response to these problems in the consumer market, Sloan developed an enhanced emphasis on the design of cars and on their aesthetic qualities, but also developed the idea of the annual model change in order to renew interest in new cars.

The relationship between post-Fordism and automobility should thus be regarded less as an eclipse of the centrality of cars and more of a triumph of automobility over the rigidities of the previous accumulation regime. Again, we need the concept of 'automobility' here. If we limit our analysis to 'the car' then what we see is the persistent crises of particular car firms, the apparent saturation of car markets and the decline of car industries relative to 'new' 'innovative' industries such as biotechnology, telecommunications, software, etc. and to the financial sector. But when we think more broadly in terms of automobility its centrality to growth is still palpable, principally through the mode of mobility which it facilitates.

### States promote the car

Given the structural role of the state in promoting accumulation it is no surprise that once the car's potential in accelerating accumulation was

realised states began to promote the car. The car industry offered significant improvements in the capability to commodify means of mobility and at the same time accelerate the movement of goods and people in the economy. Promoting the car through hidden and not-so-hidden means has helped it to become the dominant force it is. Such promotion is perhaps best understood in terms of the state's structural role in capitalist societies, its general imperative to support the conditions for capital accumulation (e.g. Jessop 1990) and the particular understanding of the requirements for accumulation in specific historical periods. Support for the car thus helped to reproduce state power itself.

Many restrictions were initially in place which acted to hamper the use of cars (Wall 1999: 17–39). The classic case was the Red Flag Act (Locomotive Act 1865) in Britain which restricted the speed of motor vehicles to 2 mph, and insisted that three people accompany such vehicles with red flags of warning. This was repealed only in 1896 when the red flag provisions were abolished and the speed limit raised to 14 mph (Overly 1990: 61). France instituted 6 mph speed limits in some cities and in 1912 the Parisian government 'ordered gendarmes to shoot out the tires of speeding motorists' (McShane 1994: 113). In the United States, steam-engined cars had been banned earlier in the century but the ICE was not placed under such restraint. Such restrictions reflected opposition to cars on grounds of noise, smell and danger but they were dismantled in the United States more quickly than elsewhere, largely as judges ruled that cities did not have the right to impose them (Volti 1996: 664). Ironically, this initially involved dismantling restraints on the bicycle, and bicycle lobbies were in the forefront of lobbying for their restriction (Wall 1999: 22). By 1900 'activist judges had ruled against urban regulations that might impede automobility' (McShane 1994: 115). The other major restriction was imposed by the quality of roads, as both car manufacturers and municipal engineers were aware, and the former acted to promote road quality (McShane 1994: 109–10).

After car manufacturers had managed to overcome these political obstacles to the car's expansion – in most western European countries and the United States by about 1910 – the state by and large became a dedicated ally of the car companies. In some cases the car's expansion became a specific election pledge by politicians – Hoover's slogan in the 1924 election was 'a chicken in every pot; two cars in every garage' (as quoted in Wernick 1991: 71).

The promotion of the car economy by the state has had three main facets.<sup>18</sup> The first has been road building (both within and between urban areas). The second has been the progressive neglect and downgrading of public transport and non-motorised forms of transport. The third has been the fiscal measures which effectively subsidise car use relative to other forms of transport.

As Wolf (1996) points out, roads differ from rail in that the ownership and control of the transport infrastructure (roads) and of the means of transport (cars, lorries) can be easily separated. This separation has enabled states to promote the car, resulting in a system operating by the principle of:

Private appropriation of profit, socialisation of costs and losses. Private profits are appropriated on the vehicle manufacturers, the insurance companies and the motorway construction firms; costs are socialised by means of public financing of motorway construction, policing, hospitalisation of the injured and repairs to the environment. (Wolf 1996: 89)

The principal element of this has been road building (Luger 2000: 12). The emergence of the car demanded improvements to the quality of road surfaces and the emergence of mass-motorised societies demanded substantial increases in the quantity of roads. The provision of such investment out of general public expenditure has been something which all states have accepted as one of their basic roles. Highways became, in Wood's term, 'a natural function of the state' (Wood 1992: 107, quoted in Freund and Martin 1993: 82).

With the exception of a small number of privately financed toll roads, states have historically always paid the cost of road construction. The difference in the era of the car, however, has been that the costs of road construction (up to the standard required by the car and, in urban areas, to avoid dust) have been substantially higher than previously. The direct benefits of road construction have also increasingly been received primarily by car users whereas previously users of

<sup>18</sup> I leave out here discussions of oil geopolitics, dealt with in chapter 2, although this could be regarded as an additional dimension of the promotion of cars by the state. I also leave out discussion of the alleged collusion between states and firms in the 'GM conspiracy' to dismantle US public transport. I have discussed this debate in chapter 3, although if one is persuaded that it was a conspiracy, it is also suggestive of the length some local states would go to promote cars over public transport.

the roads of various types, employing a variety of transport modes (horse, carriage, cart, bicycle, trams and pedestrians) and for non-transport uses, such as leisure and commerce, benefited from road building and maintenance.

This development was intensified by urban freeway and parkway construction and reached its peak with the construction of motorways. What is distinctive about these constructions is that they have been designed and regulated to be used solely by motorised transport – bicycles and pedestrians are explicitly excluded. They are also specifically designed, by avoiding or going straight through city centres, to compete with/replace trains, which had previously been the primary means of interurban transport.

Motorway construction was initiated by Mussolini and then Hitler, primarily for military reasons, but other countries soon followed. Two classic accounts of the process in the United Kingdom and the United States are Hamer (1987) and Davies (1975). In both cases, the 'road lobby' (Hamer's phrase) or 'highway lobby' (Davies' term) increasingly knocked on open doors in persuading governments to spend large amounts of public money. The coalition of car, oil and construction companies, allied with highway and municipal engineers, is regarded as the single most powerful political lobby. In the United Kingdom its initial plan in the early 1930s for a 1,000-mile motorway network was taken up by the Labour government in 1946 and completed ahead of schedule by 1972. The plans were then rapidly expanded to 3,500 miles, the government again adopting very closely the plans of the British Roads Federation (BRF, the organisation providing the forum for the roads lobby) (Hamer 1987). In the United States, the Highway Aid Act 1956 created a system whereby the bulk of car-related taxes went into a Highway Trust Fund which could be used only for highway construction; the state put money into the fund from other sources to fulfil the lobby's ambitions (Davies 1975; Gordon 1991: 12–13).

The political/economic importance of automobility means that such road construction projects increasingly extend beyond the spatial scale of the state. The EU has since the mid-1980s expended considerable energy in developing such networks at a European scale while the Trans American Highway is also conceived as facilitating continental-scale trade and investment. The TransEuropean Transport Networks, of which motorway construction is the most important



element, in part reflect the power of European business (Bowers 1993; Doherty and Hoedeman 1994; Richardson 1997) but also an understanding of the importance of transport to economic growth and integration. In the words of Transport Commissioner Neil Kinnock, 'just as the development of efficient national transport networks was vital in the last [nineteenth] century in what became *national* 'single markets', so in the next century the same will have to occur *internationally*. The challenge is not so much new in nature as new in scale' (Kinnock 1996, quoted in Barry 1999: 79).

The second aspect of the state's promotion of the car has been neglect of alternative means of transport. State spending on transport since 1945 has systematically favoured roads. Rail has declined throughout this period, with many countries dismantling large proportions of their network (Wolf 1996: 75–81, 117–23). A recurrent complaint is that there is no 'level playing field' between road and rail (and as Wolf (1996) shows, canals) – for example, rail investments in the United Kingdom have to show a profit while the costs of road construction are written off by the state.

The third aspect has been hidden subsidies to the car relative to its competitors. Despite high petrol taxation in many countries the net effect of relevant fiscal policies is usually regarded as favourable to the car. The differential treatment of infrastructure investment between road and rail is clearly an important component of this but other aspects are also significant – for example, tax relief on provision of company cars. Athanasiou (1996: 264) estimates that the value of total subsidies to the car in the United States is approximately \$400 billion, while Cobb (1999) puts the figure more conservatively (but still large) at \$184 billion.

In addition to the structural role which states have in promoting accumulation, the favouring of the car has been driven by the competitive interstate environment, as emphasised by economic geographers such as Dicken. Sachs (1992) expresses the dynamic well in his account of debates about the car in early twentieth-century Germany:

What critics of the automobile saw themselves confronted with in the debates of the time could be called the executive syllogism of competition-driven progress: (a) technological development cannot be stopped; (b) escape is not an option, so Germany [or Britain, France, the United States, etc.] must take the lead; (c) therefore, we are called upon to support the automobile and its

industry with all the means at the State's disposal ... The world market cast its long shadow over debates about the meaning of motorization on native streets. (Sachs 1992: 27)

But it was not only interstate economic competition which created strong incentives for governments to promote the car industry. After 1918, the increasing military utility of motorised transport meant that a strong car industry was connected in governments' minds to preparedness for war (remember that Mussolini and Hitler first conceived of motorways to accelerate the movement of troops).

As governments have systematically promoted cars over their alternatives they have thus also helped to sustain their own rule. Economic growth has become one of the central indicators of government legitimacy in the twentieth century. Favouring the car has therefore enabled state elites to ensure their own rule because they have been able to promote both the interests of structurally dominant capital and consumerist understandings of individual identity, helped to focus nationalist projects around particular technologies and in specific contexts to promote employment.

## Conclusions

The backlash discussed in chapter 3 assumed that the rise of the car can be empirically understood in terms of the interactions of millions of individuals 'autonomously choosing' to buy cars and drive them and then normatively basing this analysis on the presumed moral connections between human autonomy and car driving. This chapter has shown that the empirical side of this argument is thoroughly unpersuasive and misleading. The rise of the car was directly stimulated by a range of decisions by states that favoured cars over their competitor transport modes. States did this because of the way that, for a variety of reasons, cars produced accelerated economic growth and thus secured the conditions for the reproduction of capitalist society and state legitimacy as well as at times enabling states to pursue other goals such as military expansion or defence. The chapter has also shown that this is best understood not as an inevitable, necessary connection between automobility and economic growth but because of the particular way in which a growth regime, known most commonly as Fordism, was assembled during the early part of the twentieth century



and then the way in which car firms, and the consumption of cars, played particular roles in the collapse of that growth regime in the 1970s and the transition to something coming 'after Fordism' – however that 'after' is characterised. One of the things this analysis thus enables is a critical look at projects to 'green the car'. This is the subject of chapter 7, but the point from this chapter to be taken up further there is that such projects are almost all posed in technical terms (whether in terms of changes to individual cars, or in terms of promoting other transport *technologies*) and need to take account of the political analysis suggested here concerning the importance of cars to capitalist reproduction, the structural power of car firms and so on.

What this analysis does not adequately enable us to account for is the normative side of the backlash's arguments. In other words, even if this history of cars is right (or, at least, much better than their crude individualist account), it does not get rid of their claims that cars (more or less uniquely, as far as Lomasky is concerned) act as extensions of human autonomy and that to challenge them is thus to be an 'enemy of freedom'. As we have seen, one of the limitations of the political economy frameworks is that they tend (with some exceptions) to focus on the politics of production at the expense of the consumption dimension of capitalist accumulation. A crucial dimension, explored in chapter 5, is thus overlooked. What is also entailed in the development of automobility has been the (re)production of the modern subject as 'autonomously mobile' and thus the intertwining of automobility and the practices of governmental power. It is this which at the same time undermines the essentialist connections made by Lomasky and others about cars as extensions of human freedom. For what was done in the making of automobility was the (re)making of the human subject as *autonomously mobile* through car driving itself.

## 5

## The car's cultural politics: producing the (auto)mobile subject

A body in movement, therefore, is not simply an immobile body subsequently set in motion, but a truly mobile object, which is a reality quite new and original.

(Boccioni 1913/1973: 93)

### Introduction

The promotion of 'the car' by states, as discussed in chapter 4, has also entailed attempting to promote and produce a new type of person, a new subject, oriented towards the sort of movement which cars make possible. Cars presuppose and reproduce – or, rather, their benefits are maximised by – an orientation to mobility which regards its maximisation and flexibilisation as a value, as something of positive meaning. But for such subjectivities to arise, effort was expended. Thus at the same time as automobility has been at the heart of the reproduction of capitalist political economies it has also been closely bound up with the shifts in the operations of power in modern societies, as emphasised by Foucault, Virilio and others. It is now a commonplace to define modern subjectivities as existing principally through movement itself, that the modern subject *is* the mobile subject – or, otherwise put, to *be* modern is to *be* mobile.<sup>1</sup> This chapter attempts to show how at the heart of automobility's politics is the production of particular types of subjects.

I thus want here to focus on the way in which the emergence of a car *culture* has been crucial to establishing the dominance of automobility. While the naturalisation of the autonomy/mobility connection is basically flawed, as shown in chapter 3, it would be nevertheless inadequate and misleading to characterise the rise of the car simply as a story

<sup>1</sup> As we saw in relation to IR theory in chapter 1, this is often an uncritical recognition. See, for example, Bellanger and Marzloff (1996) or Attali (2003).