Dominion Over Space and Time

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On the Cultural History of the Automobile

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Introductory Remarks

2012 was considered to be the year with the highest gasoline prices in the history of the automobile. Nevertheless, the number of fuel-guzzling SUVs (sports utilility vehicles) continued to rise to 16% of new car sales. Models such as the Porsche Cayenne enjoy great international popularity. This car combines the prestige of the Porsche sports car, established over many years, with the brawny form of a sedan, which rises above the normal level of other cars and offers the comfort advantages of a luxury car. At the same time, environmental organisations have been advocating the purchase of new cars with low fuel consumption and pushing for a maximum speed limit in Germany since the 1980s.

Symbolic Meaning of the Car

This fact shows that the car cannot be understood solely from the point of view of its practical usefulness. Rather, its construction and features are inscribed with essential

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cultural and symbolic characteristics, which continue to exert a largely subconscious influence today. If one is trying to contain the harmful consequences of car culture or to eliminate them through a new conception of this object, a prerequisite for the success of all such efforts is to be aware of these symbolic meanings. They have to be incorporated into the concepts for the further development of the car.

The conversion of the powertrain to an electric motor is a sensible goal for the first step towards electromobility. However, it is by no means certain that the difficulties that have not yet been surmounted can be surmounted through new technical solutions. In the first phase of the electric car from around 1900 to the early 1920s, it was not possible to eliminate the disadvantage of restricted range, due to the limited capacity of the battery. At that time, Germany was one of the leading nations in electrical engineering and the construction of electric motors.

In the past decade, great efforts have again been made to find better technical solutions for the energy storage of electric powertrains. The development of new materials for lighter chassis and body construction is also an additional, promising path. However, all historical experience shows that technical innovations often also have side effects and consequences that only become apparent after a certain delay. This is also the case in the context of electromobility.

Culturally-Specific Characteristics of Usage

Technical innovations do not obviate the need to recognize the importance of the car for Western modernity, because the electric car also remains part of the longer history of the car as an object. This consists not just of technical data but also of culturally-specific usage characteristics for the users.

The acceptance of new concepts for the car remains bound to the quality of its cultural characteristics. The worldwide success of the car as an object of industrial mass culture is evident today in economically aspiring nations such as China and the countries of Latin America. Like no other object, the car demonstrates the value of the cultural and symbolic qualities which are inscribed in its construction and design for modern, global civilisation. In addition, when working on a meaningful new conception of this object, and even looking beyond electric mobility, it is indispensable to take into consideration the gains achieved so far for mankind's scope of action, for our "dominion over space and time".

Gains Achieved for Mankind's Scope of Action

The cultural conception of the car's use potential and its symbolic connotations is central. It is decisive for the success or failure of a new design and needs to be reconsidered with its environmental impact in mind.

Ecological Modernity

These are open questions at this stage. The necessary reformulation of modernity, which is geared towards an ecological modernity in the context of our experience of climate change, can be regarded as a creative project in the service of human civilization. To accomplish this, it is essential to be able to classify and recognize our present situation in the long-term context of its origins. This is the only way to develop meaningful concepts and convincing technical innovations for the future. The professional designers in the offices and the "decision-makers" in companies and in politics need a cultural-historical background knowledge for this, providing them with a depth of focus in their judgements.

The following text is a brief history of the car as an object, analyzing its characteristics in light of their potential for human action. The complexity of this history can only be understood as part of the cultural history of modernity.[1]

The Two Poles of the Man-Machine Relationship

This commentary from 1906 by early car driver Otto Julius Bierbaum reads like a clairvoyant prognosis:

> We are at the very beginning of its development. But it is already perfectly clear how enormous its prospects are. What we experienced with the bicycle will be repeated with the automobile—only to a greater extent. The rhythm and intensity of traffic will adapt to this almost ideal means of transport. It will begin a new era of travel, and not just for very rich people […]. (Bierbaum 1906: 321)

Individual Mobility as a Basic Human Need

It is a fact that, since its invention in 1886, the car has experienced increasing acceptance in industrial societies. It represents in an exemplary fashion the possibilities and limits of modern technology and modern comfort in satisfying a basic

[1] This text was originally published in the volume *Fahrrad, Auto, Fernsehschrank. Zur Kulturgeschichte der Alltagsdinge*, edited by Wolfgang Ruppert (1993), under the title "Das Auto. Herrschaft über Raum und Zeit". It was conceived as part of a new cultural history. For the present version, it had to be shortened, with a focus on the essential points.

human need, namely that of individual mobility. The car has therefore rightly been called the leading fossil of our time.

The automobile has been given a great deal of attention over the course of its hundred-year history. But a considerable part of the literature, with its illustrations and technical details, merely meets the needs of enthusiasts and reproduces the technical myth associated with the car. Monographs such as those by Eric Schumann (1981), Wolfgang Sachs (1990) or Wolf Dieter Lützen (1986) have so far been the exception in this regard. The aim of the present text is to bring out the structural and cultural continuities of the automobile as well as its transformations.

From the beginning, cars were designed for different, everyday purposes and produced in a considerable variety of types. In Meyer's *Großes Konversationslexikon* from 1909 one finds the following entry under the keyword 'Motorwagen' (Fig. 2.1):

> Motor-driven vehicle, in the narrower sense a motor-driven vehicle with no need for rails. According to the type of motor power, a distinction is made between gasoline cars, steam cars and electric cars; according to the type of car: steam calash, steam coach, steam bus, etc. Duc, Coupé, Phaethon, Tonneau, Landaulette, delivery van and truck. The most widespread and technically most accomplished are the gasoline cars. (Meyers 1909)

Fig. 2.1 The cars are still carriages, but equipped with motors. The manufacturer Lutzmann from Dessau presents various models in a motorcade, 1897. (Source: Landesbildstelle Berlin)

In order to explain the continuing quantitative expansion of the car from 1886 to the present, it is necessary to start from both poles of the man-machine relationship: the car, a machine-object, and the person who acquires it. The one pole, the vehicle, is defined as a technical-functional mechanism that provides the most original and important practical use value, namely faster movement in urban traffic, for travelling or for freight transport. The driver in no way acts as an abstract or even isolated figure: as a subject, he is integrated into the context of the cultural forms of expression of his day. His possibilities of using the car range from its use as a simple means of mobility to the spoiler-equipped "speedster", with which both the desire for mobile presence, for performance-oriented driving and the sensual experience of speed as well as—in the mode of sport—individual aggressiveness can be acted out. The elegance of expensive makes of car with aesthetically impressive and chrome-plated bodies, which serve the desire for conspicuousness and individuality of their wealthy owners, should also be mentioned.

The driver uses the car in the context of social rules, social conditions and cultural patterns. In the usual everyday forms of the acquisition of the car and the ways of using and dealing with it, a considerable role is played by socially communicated desires and conceptions of aesthetics, by ideas and information typical of the period in question. These are not re-invented on an individual basis, but rather taken up in a communicative context and as a rule merely varied.

The Car Considered as the Driver's Communicative Behaviour

It therefore seems appropriate not to explain the driver's actions solely through his relationship with the object, the car. Rather, he communicates into the public space of the street in which he is being perceived and where his audience—the other road users—is also on the move. The ways a driver uses his car can thus be interpreted as his communicative behaviour, even if there is a tension between typical group attitudes and varying degrees of individualisation.

If one looks for the underlying reasons for the fascination surrounding the car, which—despite its well-known negative effects—continues its success story even today, one must turn one's attention to the characteristics and practices that characterize the object itself in its material structure, regardless of the differences between sexes and social classes when it comes to ways of making use of the car.[2]

[2] By 1900, the car was already being driven by upper-class women, although light and elegant vehicles were considered appropriate for them. On gender-specific uses of the car, cf. for example Steffen (1990: 133 f.).

The Car as an Object of Industrial Culture

Unlike the railway, the car was not restricted to a rail network, but was in principle able to operate independently, in open terrain. It soon became apparent, however, that the increasing speed of the car caused enormous trails of dust to be thrown up and that the roads that had been standard up to then were no longer adequate, so that the practical value of the car only became apparent in connection with an improved infrastructure (cf. Merki 2002; Möser 2002). This led to the expansion of a suitable road network based on the principle of a smooth flow of traffic, a project that has been pursued ever since and has dominated conceptions of modernisation (cf. e.g. Schmucki 2001).

Decision to Prioritize Direct Movement Through Urban and Rural Spaces

Accordingly, cities were redesigned in the course of the twentieth century and the landscape was further transformed.[3] In the culture of modernity, a—barely considered—decision in favor of direct movement through urban and rural spaces was made, placing it above the preservation of nature and other human needs. With the construction of motorways, which cut through the landscape in the form of straight raceways, the intensive networking of the regions began in 1933, for example with the north-south route from the Baltic Sea via Berlin-Nuremberg-Munich to the Alps (Stommer 1984). Their routing was designed as an engineering concept in such a way that the natural obstacles were smoothed out, with river valleys crossed by means of wide-span bridge structures.

Since the 1950s, massive urban motorways have also been built inside cities as quasi-natural borders between the city districts. They separated different traffic and neighbourhood spaces from each other.

In urban space itself, the car was granted a high priority. Vehicles parked on both sides of the street have been obstructing the roads ever since the mass motorisation that started in the 1950s. Parking spaces were created in traffic areas that were still vacant, which mostly only brought temporary relief. New forms of architecture were designed to meet the specific needs of parking and protecting cars: garages for single-family houses, underground garages for residential complexes

[3] Car culture is discussed as the most important form of everyday culture by Fünfschilling/Huber (1985) and by Bode et al. (1986) in their catalogue accompanying an exhibition in Munich.

and supermarkets, multi-storey car parks for inner-city traffic congestion zones (cf. Honnef 1972). In order to regulate traffic, traffic signs increasingly served as a visual expression of traffic regulations. Traffic lights began to regulate the rhythm of movement of the cars in the traffic flow on the basis of time sequences. Compared to the free street space around 1900, a hegemony gradually developed, in which the artefacts of automobile traffic and the dominion of the structural order derived from it were set against weaker road users, such as cyclists and pedestrians or children and wheelchair users. Furthermore, the operation of the car required a network of services which expanded into a separate economic sector based on the division of labor. The gasoline pumps of the first decades became service stations offering a wide range of services from car washing to tyre changing (see Polster 1982). A longer overview of the numerous material objectivations of car culture would cover the following: car service, car dealerships, car centers, car repairs, car accessories, car boutiques, car tuning, car radios, car phones, car sport, sports cars, car comfort, luxury limousines, nippy runabouts, spoilers, car styling.

Hegemony of the Artifacts

The car and its systemic requisites—such as the road network, traffic architecture and services—developed into a characteristic element of industrial culture.[4] This can be explained above all by the far-reaching democratization of the car as a privately used vehicle.

Democratization of the Car

Mass Motorization

In 1907 automobiles began to be counted. The statistics provide a picture of the course of motorization in the German Reich and the quantitative diffusion of the car (cf. Krämer-Badoni et al. 1971: 11, 16). They show an astonishing continuity and at the same time a clear dependence on political and economic history. While in 1907 the number of automobiles was estimated at around 10,000, one can assume that in the first two decades of automotive history cars were considerably less

[4] A source on the state of development in the 1920s cf. Allmers et al. (1928).

prevalent. The quantities built were used, for example, for models such as the *Daimler Belt Trolley* from 1895 with approx. 130 units or for the *Benz Ideal* from 1901 with about 300 units. In this early period, however, there were about twice as many motorcycles, which were regarded as "vehicles for snobs".

Dependence on Political and Economic History

Only after the inflation and currency reform of 1923 (98,000) and the ensuing economic consolidation did the number of cars rise to 261,000 by 1927, to 422,000 by 1929 during the "heyday" of the Weimar Republic, and to 510,000 in 1931. Due to the world economic crisis, the number fell slightly in 1932 to 486,000, only to rise again to half a million in 1933 and triple again during the Nazi era up to the beginning of the war: in 1935 there were already 795,000 cars; in 1937 there were 1,108,000 and 1,426,000 in 1939. After the war began in 1939, the use of private cars was suspended. However, this break in private motorisation was quickly made up for in the post-war years.

Fig. 2.2 The long-distance journey from Paris to Berlin ended at the Berlin-Westend trotting track in 1901. (Source: Landesbildstelle Berlin)

The Motorized Society

Between 1951 and 1960 the number of passenger cars increased tenfold. Around 1954/1955 the number of automobiles in the now much smaller area of the Federal Republic of Germany reattained the highest pre-war level, with about 1.5 million vehicles. In his analysis of the significance of the car for mass mobility, historian Peter Borscheid (1988: 122) assesses the time around 1960 as marking the "epochal boundary" to motorized society, especially since this trend continued in the 1960s: 1963: 6,807,000; 1971: 14,377,000 cars.

Increase in Real Income

This quantitative process was associated with a qualitative historical development that was embedded in a context of specific socio-historical conditions. Mass motorization was only possible on the basis of the increase in the real incomes of broader strata of the working population, which took place after 1957/1958 in an historically revolutionary manner for both workers and white-collar employees. Their need for increased spatial mobility found an attractive cultural form in the new opportunities for activity offered by this industrial object, namely as motorists.

The car brought considerable changes to the scope for decision-making in the search for work. Regional mobility and internal migration in the Federal Republic increased overall. The growing volume of traffic in turn functioned as a "practical imperative" in the development and sealing of roads (cf. Linder et al. 1975). Better road surfaces reduced both driver stress and wear and tear on cars.

The daily distance people travelled by car or public transport increased. Whereas in 1960 the average distance was 12.5 km, in 1970 this figure had risen to 20.6 km, with an upward trend to 40 km to date (cf. DIW 2011). The faster flow of traffic along the road network, which is still being expanded today, extended the travel radius for those commuting between their place of residence and their workplace.

Improvement in the Standard of Living

In addition to the manifest usefulness of the car for commuters, the purchase of a car also came to symbolize the increase in the standard of living, which went hand in hand with the extension of personal freedom of movement to the place of residence, manifested in the form of the Sunday excursion.

As a result, the difference between the city and the surrounding countryside diminished, a new form of urbanisation of the countryside began, and the objects of industrial mass culture increasingly filled a landscape that had previously been preserved.

Despite continuous motorization, however, full motorization was not achieved even in the 1970s and 1980s. There are now around 43 million passenger cars in Germany. For a minority of the population, the car remains unaffordable for financial reasons.

Car Owners

In the first decades, the automobile remained a pure luxury object, owned and driven by estate owners, people of private means and bourgeois professionals such as doctors. For the former group, the car was partly a machine for sport and pleasure, partly an object that met the requirements of representing status (Fig. 2.2). An advertisement by Benz und Co. in 1888 for the "Patent-Motorwagen" illustrates the advantages that were supposed to make a purchase interesting for people at the time (quoted from Sachs 1990: 14). The vehicle was not only "comfortable and absolutely safe", but "always immediately operational". Due to the "gas operation by petroleum, gasoline, naphtha etc." it was classifiable as a "complete replacement for horse-drawn wagons". In addition, it was cheap, with 'very low operating costs', since it 'saves the cost of the coachman, the expensive fittings, maintenance and upkeep of the horses'. The target audience for this advertisement and with whom the story of the procurement of cars began, were those wealthy private individuals whose standard of living naturally included a carriage with horses. However, the "convenient" operational capability claimed in the advertisements was by no means entirely a given. In contrast to the time-consuming hitching-up of horses, the automobile could be started without delay, but the machines themselves were not yet fully developed and thus prone to failure. Therefore, in place of a coachman, it was necessary to employ a chauffeur, who—doubling as a mechanic—was also able to service, repair and keep the car ready to drive (Picture 2.3).

In the 1920s, other sections of the bourgeoisie and businessmen began to use the car to reshape their lives. In addition, simple utility vehicles such as cycle cars were also built, but the number of units remained low. For example, between 1924 and 1925 about 1500 units of the *Mollmobil* were manufactured, a light vehicle based on the technology of bicycle construction and which today seems primitive. With a simple box chassis, it reached a maximum speed of 35 km/h.

Picture 2.3 In the first half of the twentieth century, horse and cart, tram and the "modern" car still moved as equals side by side in the street (1921). (Source: Landesbildstelle Berlin)

Price Reductions as an Industrial Mass Product

Only in the third decade of the twentieth century did the possibilities for purchasing a car increase, in several stages, above all due to price reductions resulting from manufacturing methods that turned the car into an industrial mass product.

Towards the end of the 1920s, a cheap, mass-produced car "for all" moved into the realm of the technically possible. This long-standing and latent dream of the middle and lower classes was taken up by Nazi propaganda, which presented the "Volkswagen" as an acquisition within reach of every saver. The utopia of the motorized national community seemed to be the expression of a consistent historical trend: not just the wealthy but also workers and manual laborers (*Arbeiter der Faust*) were meant to benefit from the technology. The Nazi leisure organization "Kraft durch Freude" combined the development of the *KdF Auto 22* with an advertising campaign in which the Führer, Adolf Hitler, was portrayed as the initiator of future achievements.

Goebbels' speech at the opening of the International Automobile and Motorcycle Exhibition in Berlin in 1939 emphasized the connection between large-scale pro-

duction and the expansion of the sales markets through the expansionist NS foreign policy, as well as the price reductions brought about by standardized mass production, using the *Volksempfänger* (people's radio receiver) as an example:

> For example, the customer base for radio sets in today's Reich has grown so large that we are now in a position to significantly reduce production costs, thanks to the mass consumption that is already guaranteed internally. The same also applies to the production of German films etc. However, the car will only be able to compete on a global scale in terms of pricing if the possibility of large-scale series production is ensured. This presupposes in all circumstances an adequate economic sphere of our own. (Goebbels 1939: 15)

As from 1938, an instalment savings plan had been on offer, which promised the acquisition of the object of desire, namely the Volkswagen, and payments were made into the accounts of a total of 336,000 savers. However, their expectations were disappointed since in the end production did not get under way at the newly built Volkswagen plant in Wolfsburg (cf. Mommsen 1996).

Until the 1950s, the purchase of a prestigious and comfortable car was reserved exclusively for the upper classes. Motor vehicles for workers and white-collar employees were initially mainly restricted to motorcycles or scooters. In the early 1950s, the purchase of a moped had become possible even with a very modest income. Compared to two-wheeled vehicles, which offered no protection against bad weather and the cold, the multi-wheeled vehicle types with an enclosed driving space were obviously perceived as a gain in comfort: for several years, small cars like *L1oyd*, *Goggomobile*, *Maico*, *BMW-Isetta* or the *Heinkel Cabin Scooter* reflected the trend of symbolizing the increase in mass purchasing power.

Sold in large-scale series in the 1950s, the *VW Beetle* offered the advantage over these small cars of a reliable family vehicle with considerably more freedom of movement for passengers (cf. Hickethier et al. 1974).

Mass motorization in the 1950s and in the wake of the "Economic Miracle" in the 1960s can be viewed as a phenomenon of great social and cultural significance. Of 100 private households, 27 already owned a passenger car in 1962; by 1973 the number had risen to 55. For people living in the countryside, the mobility gained by buying a car brought urban spaces within reach and made the short trips necessary to everyday life considerably easier. In addition, driving to Italy for a holiday, using one's own car—camping on the Adriatic coast, for example—soon became one of the attainable goals and improvements in the collective standard of living.

Industrial Mass Product

In the course of its quantitative proliferation, the car developed into an important paradigm of industrial mass culture, in which its dual nature became visible. On the one hand, the history of the automobile was associated with the history of an important and growing branch of industry, the automobile industry, in which innovative rationalisation processes with exemplary character for the mass production of goods were developed. The profit expectations associated with the production of large-scale series resulted in an active marketing policy on the part of the companies. Through advertising and vehicle design, market strategies were invented to address potential buyers and direct their wishes specifically to the manufacturers' product range. On the other hand, car buyers were focused on the fulfilment of the promises of practical usefulness conveyed by advertising, and the ideals associated with it. They played a part in the socially communicated concepts of modernity and their visual codes.

The forms of production reflect the history of industrialisation in the twentieth century. In the first decades, manual manufacturing processes predominated in the production of small-scale series. In the case of models that sold well, the assembly technique was the industry standard form of individual assembly stations placed alongside each other. The parts were manufactured separately then fitted to the car by hand.

Introduction of the Assembly Line

In Germany, too, engineers had since 1900 been looking for ways to raise standards of rationality and, in the context of business and study trips, began to test the transferability of the more advanced American methods. With the successful introduction of the assembly line in 1913 by Henry Ford, a new model for industrial mass production became established in the assembly technology of automobile construction. On the basis of precise measuring methods and the Taylorist division of labor, the various production steps were allotted to fixed individual workstations on a moving conveyor belt. While the vehicle being assembled was at his workplace, each worker had to perform the pre-planned operations in a precisely measured time, before the vehicle moved on. The pace of the belt dictated the working speed, to which the individual had to adapt. The standardized parts were mass-produced in other production units and delivered for assembly, which facilitated a considerable increase in the effectiveness of the assembly process.

From 1914 onwards, this flow production made it possible to reduce the price of the "Model T" (which was produced between 1908 and 1927) in an exemplary fashion. Whereas in 1909 it had cost 950 dollars, by 1917 its price had fallen to 350 dollars, and in 1923 to 290 dollars, thanks to the assembly line. At the same time, the number of buyers increased due to the price reduction. The model *Tin Lizzie* sold a total of 15,007,033 units.

Because of the smaller national market in Germany and a larger number of competing manufacturers, but also because of the economic crises and inflation after the First World War, it took until 1924 for the first car to be produced on an assembly line: With the so-called *Tree Frog* the car manufacturer Opel—borrowing from the French model of the Citroën CV 5—reached wider groups of buyers, mainly from the middle classes, who now made their entry into motorisation.

Product Policy

In the 1920s, the importance of a product policy that took into account the changing tastes of the times and the internal differentiation of the model range as designable factors grew. In competition with Ford, whose "Model T" began to look old-fashioned in the mid-1920s, General Motors had developed a new product strategy, which involved the gradation of its automobiles in a hierarchy from expensive to inexpensive, so that for upwardly mobile people, with increased income and seeking greater prestige, it was possible to buy a higher-quality vehicle from the same manufacturer. This concept was called "Sloanism", named after the then director of General Motors, Alfred Sloan, (cf. Sachs 1990: 98 f.).

Increasing Attractiveness

A further significant step in the development of an industrial mass product was taken with the changeover to a model policy based on changing fashions and, later, the planned obsolescence of the vehicles. The more rapid change of car models was intended to expand market share, but also to prevent saturation of the market (by 1927 Ford's "Model T" had become completely unsaleable). The calculated increase in the attractiveness of the models, which were also technically modified, made the work on the shape of the car, the "styling", which was supposed to make the body of the car more attractive, an important factor in company policy.

Brands

While the secret of the Volkswagen's success after the Second World War was based on its large-scale series with only minor improvements to the model and a comparatively low price, Opel endeavored to apply the tried and tested concept of its American parent company, General Motors. Along with its car for the middle classes, the *Record*, and the large, expensive prestige model, the *Captain,* Opel successfully launched the *Cadet* in the 1960s, a car designed to stand out from the mass-market *Beetle* by offering higher prestige values. The *Cadet* was meant to appeal to upwardly mobile people and at the same time bind them to the brand.

Individual Distinction

This became the general trend. Cars that stood out from the masses in terms of their prestige value gained in importance. As motorization progressed in the 1950s, buyers' needs for individual distinction found a medium in the choice of car model and, in the optional extras, a rich field of expression for cultural codes, which enable individuality to be constituted in and through an object. The product policy of the car manufacturers pursued the strategy of translating the wishes of consumers for social differentiation into a model range of different types of cars. This proved to be an increasingly important cultural function of the car.

Cultural Function of the Car

The Car as an Object of Modernity

The French structuralist Roland Barthes devised the image that today cars are "the exact equivalent of the great Gothic cathedrals" of the Middle Ages (Barthes 1964: 88[5]). He based this comparison on three reference levels: "I mean the supreme creation of an era, conceived with passion by unknown artists and consumed in image if not usage by a whole population which appropriates them as a purely

[5] Roland Barthes, "The New Citroën", in *Mythologies*, trans. Annette Lavers (New York: The Noonday Press, 1991), p. 88.

magical object" (ibid.). What occasioned Barthes to speak of this "supreme creation of an era" was the presentation of the Citroën DS19 in 1955.[6]

To the extent that, in the course of the twentieth century, the emotional and symbolic needs of considerable sections of the population were linked to the car, the question remains as to what characteristics made this machine an expression of a specific experience of modern times.

An indication of the cultural meanings that the car took on even in its early days can be found in the way in which artists thematized and processed the phenomena associated with it as pictorial subjects. In the eyes of the Italian futurists, the car—along with the aeroplane—became a symbol of the new dynamic age because it represented the trends of innovation and the spirit of technical civilization.

Futuristic Manifesto: Beauty of Speed

In the Futurist Manifesto of 1909, the machine that generated speed was aestheticized: "We affirm that the world's magnificence has been enriched by a new beauty: the beauty of speed. A racing car whose hood is adorned with great pipes, like serpents of explosive breath—a roaring car that seems to ride on grapeshot is more beautiful than the Victory of Samothrace".[7] Super-charged with meaning, the myth of technology and progress was here imbued with the celebration of dynamic movement: the car was stylized as a cult object of speed.

Practical Values

In 1906, an anonymous commentator made an astute observation on an essential characteristic of modernity, namely the compression of the factor of time, which was subjectively expressed in the needs of modern man: "One wants to be transported as far as possible in the shortest possible time, and our fast-paced generation has provided itself with new means of transport" (quoted by Sachs 1990: 191).

[6] Later, the car, which was elevated to cult status, was also promoted as a goddess because of the linguistic similarity of (la) déesse(= the goddess) with the letter DS.

[7] F. T. Marinetti, "The Founding and Manifesto of Futurism", trans. R.W. Flint, in Apollonio, Umbro, ed. *Documents of 20th Century Art: Futurist Manifestos*, New York: Viking Press, 1973. pp. 19–24.

Exponentiation of Power

The car is a "magical object" (Barthes) that emerged from this resolve. It was built as a machine for more rapid movement, whose capacity for linear acceleration far outstripped the natural possibilities of the body. Measuring this power in terms of horses and thus "horsepower" (hp), which had previously been chiefly used in individual transport, is a reference to the original perception of the exponentiation of power that the car afforded.

An ethnological author interested in the "culture of everyday life", Michael Haberlandt, had already praised "the great increase in individual mobility" with regard to the bicycle around 1900, and which he described as a restructuring of traffic:

> It brings into the immense, countless meshes of collectivist traffic the unbound circulation of individuals who enliven the desolate intermediate streets and side streets with fleeting swarms of people, everywhere criss-crossing each other's paths, filling the broad meshes of mass traffic and creating movement everywhere where calm and immobility used to prevail. The emancipation of the individual from the cumbersome public transport system thanks to the bicycle, the new freedom of movement granted to the person […] is a cultural advance of immense significance. (Haberland 1900: 127 f.)[8]

The car continued the civilizing trend that had already been established by the bicycle. A more abstract dimension of practical use values, which gave the "supreme creation of an era" (Barthes), the car, its deeper meaning, was surprisingly precisely formulated in the "Allgemeine Automobil-Zeitung" in 1906:

> The car wants to impose man's dominion over space and time, by means of the speed of movement. The entire enormous apparatus of the railway, railway network, railway stations, signal stations, monitoring services and administration now becomes irrelevant, and man rules over space and time in comparative freedom. (quoted by Sachs 1990: 19)

[8] The historian Hans-Erhard Lessing (2003) also sees what the bicycle and automobile have in common in the principle of self-mobility. In order to make it clear that the origins of self-determined mechanical mobility lie with the bicycle, he accordingly titled his history of the bicycle "automobility".

The Car as an Objectivation of the Modern Quest for Speed and Locomotion

If one follows this analysis, the car is to be seen as an objectivation of the modern striving for "speed of locomotion", from which the "dominion over space and time" arises. Given this goal, the history of the car as an object is to be viewed as a process of optimizing a corresponding technical potential. "Speed of movement" and the "unrestricted circulation of individuals" have become guiding models of industrial civilization.

In their evaluation of a basic characteristic, the commentators on this process of modernization were in agreement: the "motor vehicle" had made individual, self-determined freedom of movement possible, from place to place, in both urban and rural areas. Ever since the early years, this new freedom of movement has been regarded as a compelling practical value and as an experience specific to travelling by car.

Freedom of Movement

With the help of the car, the individual experiences himself as no longer confined to acting collectively: he now has individually determined rhythms of time, moves at an individually determined speed and is able to take individually determined pauses. The comfort and convenience thereby made available in everyday culture also contributed to far-reaching changes in ideas about the city and the order of the modern world.

With reference to Barthes' thesis of the "magical object", however, further questions remain: is the magic of the car based on the potential of the technical apparatus to expand the natural capacities of the human body and to "erase" local restrictedness?

In any case, by driving a car, the motorist—within the limits of the man-machine movement and its functions—can experience himself as an active subject and "create" himself as an individual in and through freedom of movement.[9] In this sense, the car was designed in terms of an "I prosthesis" (Wolfgang Sachs) and a "prosthesis of our mobility" (Borscheid 1988: 135).

[9] Richard Sennett (1991) refers to the modernity of this belief in self-creation.

The Cultural Configuration in the Context of Modernity

Motif of Movement as the Motif of the Time

Of course, the car is not the only new means of transport that facilitates rapid movement. Its emergence must be seen in the context of a social and cultural configuration in which mobility and speed became increasingly charged with meaning and an essential factor in the general framework of relations with modern culture. In 1914, an outstanding architect such as Walter Gropius, who was extremely perceptive when it came to civilizational developments, listed the following means of transport as "symbols of speed": "the automobile and the railway, steamship and sailing yacht, airship and airplane". They are embodiments of "the problem of traffic movement". Gropius clairvoyantly declared the "motif of movement" to be the "decisive motif of the time" (Gropius 1914: 32).

This assessment found a counterpart in the history of the experiences of the modern individual. Around 1900, the cultural philosopher Georg Simmel, in his fundamental 1903 essay "Die Großstädte und das Geistesleben" (*The Metropolis and Mental Life*), referred to the unprecedented urban individuality resulting from rapid movement:

> The psychological foundation, upon which the metropolitan individuality is erected, is the intensification of emotional life due to the swift and continuous shift of external and internal stimuli.[10]

Kinetic Revolution

This "swift and continuous shift" had in fact been described as early as the middle of the nineteenth century as a core element of modern culture. The characteristics of the car, which served to satisfy the individual need for more rapid mobility, represented the transient and fleeting aspects of modern life. The car is embedded as a movement machine in this more comprehensive cultural-historical process of the kinetic revolution, which is objectified in the forms of material culture.

[10] Georg Simmel, "The Metropolis and Mental Life" (1903), in Gary Bridge and Sophie Watson, eds. *The Blackwell City Reader*, Oxford and Malden, MA: Wiley-Blackwell, 2002, p. 11.

In the course of the nineteenth century, the acceleration of movement led to the invention of an ensemble of new means of transport. These included trains, steam cars, bicycles, automobiles, motorcycles, airplanes. The opening of the first railway line between Nuremberg and Fürth in 1835 can be regarded as a symbolic event in Germany. In addition to the railway, the still cumbersome "steam car", built for road operation, was one of the first machines of the new mobility. As a reaction to the increasing distances within the city that the process of urbanisation entailed, rail lines were set up on which horse-drawn buses travelled until they were temporarily superseded by steam engines and finally replaced by electricity-driven trams. Industrialization—the innovative competence of mechanical engineering in the development of new mobility machines—and the increased social need for mobility were mutually dependent. With the railway, an initial form of increased acceleration and the intensification of movement had developed, which, however, was bound to the fixed lines of the railway network and, in addition, remained a collective form of travel. The need for the individualization of mobility eventually created the new generation of machines and ushered in the phase of individual transport. The increasing suitability of the bicycle brought a boost in individualization for mass transport. Furthermore, in the last decades of the nineteenth century there were various two-wheeled motor vehicles with gas engines or steam engines. However, these were not produced in large numbers, since their practical value remained restricted due to technical unreliability and also due to the fact that the road network had been extended only to a limited degree. It was only after 1900, but especially during and after the 1920s, that the motorbike with a gasoline engine became more common, when it became affordable for workers and white-collar employees due to the price reduction brought about by mass production.

Individualization of Mobility

The car represents a second push towards individualization. It is to be interpreted as a continuation and supplement of this fundamental trend of cultural modernity. The individual buyer of the "motor wagon" was able to acquire the potential for mobility as an instrument for dissolving the boundaries of space and the local bonds of individual life, in a material form—as a machine. The new forms of cultural experience associated with the car constitute a break in the history of civilization and mankind, the scope of which cannot be overestimated. This assessment becomes all the more striking when one considers that even in the eighteenth century 80–90% of the population did not travel any further than a day's journey from their place of residence in the course of their entire lives—partly because this

was not an aim, due to their embeddedness in the estates-based society, partly because the constraints of everyday life did not permit greater latitude for action. With the emergence of the ensemble of new forms of transport in the nineteenth century, the cultural experience of modernity intensified as a result of this increased mobility: the increase in the speed of movement in everyday life and the rationalization of bourgeois professional life produced the phenomenon of haste. Edginess also arose as a result of the tension between the ever more precise scheduling requirements of business activities and the hindrances caused by traffic.

Dissolving the Boundaries of Space: A Break in the Civilizational History of Mankind

The Panoramic View of Space

The associated over-excitation and mental overload led to false reactions and catastrophes, as documented by an increasing number of accidents. At the same time, with the increasing speed of the railway as a means of transport, a new form of modern perception had emerged: the panoramic view of space (cf. Schivelbusch 1977).

This was linked to the degree of speed. The faster movement caused a growing fleetingness of connectedness to a locality and loosened the contact to the landscape through which one was travelling, the experience of approaching and moving away from a place alternated more frequently (cf. Kaschuba 2004). Objects seemed to fly past in nearby space, while the landscape in the distance passed by more slowly. This aesthetic experience also applied to cyclists, as Haberland observed:

> The fleeting glimpse, the swiftness of the changes, the ephemeral images garnered in the course of a rapid transit on two wheels, while the eye constantly monitors the route, this new way of looking, in a sense also requires a new aesthetic. (Haberland 1900: 130)

While the speed of the railway passenger remained tied to the collective movement of the train, the cyclist was able to adapt, intensify or slow down the input of "ephemeral images" (*Momentbilder*) according to his individual needs by adjusting and directing his movement. Following on from and consistent with this experience of modernity, panoramic perception in conjunction with individual control over speed also became an internalized form of experience for the car driver.

With the increase in the number of road users, the encounters between drivers on the roads in turn became increasingly anonymous.

Isolation While Driving

These encounters became more abstract, reduced to the objective traffic rules. Travelling separately in one's own vehicle meant emancipation from the collectivity of the railway or bus but at the same time isolation while driving. It was only with passengers in the car that a small community came into being, in the shared movement through space.

Symbolic and Aesthetic Aspects

The conviction that the "automobile is a symbol of progress" (Bierbaum 1906: 325) was already shared by its supporters in 1906. From the outset, this symbolic charge was associated with the social and cultural uses of the car, which would therefore fulfill Clifford Geertz's definition of the term symbol: "any object […] which serves as a vehicle for a conception, the conception [being] the symbol's meaning."[11]

Aestheticization of the Car

Such symbolic meanings were objectified partly in the equipment and form of the car itself, in its design, and partly in the connection with the contemporary myths of progress produced in advertisements or photographs. In addition, being simultaneously an actor and a consumer, the motorist was able to add to the object individual forms of symbolisation that approximated his needs. These included symbolisations of social status, individual taste and the desire for distinction, but also the ownership of the car as a symbol of power or freedom. Corresponding aestheticizations of cars and the images that promoted them became part of the commercial production of attractiveness in industrial mass culture in order to attract buyers. The "magical fascination" of the object, as Barthes noted, attained and still retains

[11] Clifford Geertz, *The Interpretation of Cultures: Selected Essays*, New York, Perseus Books, 1973, p. 89.

such an intensity precisely because of these direct and indirect inducements based on aesthetic and cultural codes.

Aesthetic and Cultural Codes

The Myth of Technology and Speed

When the history of the "motor car" began, there were poorly conceived inventions that competed with each other. Work was carried out in parallel on improvements to the gas engine, the electric motor and the gasoline engine in order to develop a suitable powertrain. There was also competition between two-wheeled, three-wheeled and four-wheeled carriages with gasoline engines.

Electric Cars

As early as 1885 Carl Benz had tested a motor tricycle that reached a speed of 10–15 km/h. His four-wheeled carriage with a gasoline engine from 1886 differed only slightly from this. In the first decades, the electric car still played a role in cities, competing with the gasoline-powered vehicle. It was well suited as a taxi-cab and as a transport vehicle and experienced a temporary comeback after the First World War. However, since the problem of the heavy battery and charging it could not be solved satisfactorily, the electric car's importance declined (cf. Mom 2004).

Car Races

As their power and performance increased, the new machines were coded with the myths of technology and the "dominion over space and time" typical of the period. Early in the history of the object, a ritualized form of testing the relationship between man and machine emerged in the form of car racing. In 1895, the first race took place on the Paris-Bordeaux-Paris circuit, and in 1898 a race was held in Germany from Berlin to Potsdam and back, a circuit on which the winners reached an average speed of 25.6 km/h. In addition to testing the driving characteristics and comparing the technical performance of the car, the principle of continuously increasing the speed was already at the forefront of these early races (Eichberg 1987: 162). The benchmark was based on a concept of performance that exercised

increasing fascination as a symbol of the guiding principles of modernism. The measurement of speed and the increase in speed records constituted an implementation of the scientific apparatus of technical modernity, which had become an essential factor in the concept of progress in the nineteenth century (cf. Borscheid 2004).

Due to these high levels of symbolic meaning and the yardstick of performance optimization inherent in it, car manufacturers developed a special interest in these car races. The aspect of extreme stress at "full speed" was foregrounded in Meyer's *Konversationslexikon* of 1909, in a definition of the racing car that remains valid today:

> An automobile capable of great speed. Since in such a vehicle every screw, every bolt, in short the smallest detail is stressed to the extreme when the car is being driven at full speed, the racing car serves as a touchstone for the reliability of the construction and quality of the materials. (Meyers 1909: 191)

The speed capability increased astonishingly quickly. In 1911, the "Benz Lightning" reached a world speed record of 228.1 km/h, which held until 1924. For a touring car in 1909, an average speed of about 80 km/h was considered standard for a machine with 150 hp.

As speeds increased, car races turned into a sensual experience, with an intensification of acoustic and visual stimuli, of experience and pleasure in the amassing of perceptions.[12] As early as 1906, Bierbaum observed a peculiar tension at the initial races: "The work of competition becomes a public drama" (ibid.: 320). This was equally true for drivers and spectators.

After a car test track, the AVUS, was completed in Berlin in 1921, the races in the 1920s and 1930s developed into the highlights of an unparalleled technical cult. The myth of technology found a fitting and timely expression in the sports coverage of the races. As Barthes put it, myth is "a mode of signification, a form…it is not defined by the object of its message, but by the way in which it utters this message."[13] In the constant process of presenting the "new", the promise of happiness and the image of controllable progress were conjured up and reproduced in industrial culture. With perpetual technical innovation as a fetish of the history of objects, the car played a part in this myth and intensified it (Fig. 2.4).

[12] With the age of television broadcasts, the sensual dimension of the many stimuli intensified, since the "fleeting" movement of the racing cars is followed by several track cameras..

[13] Roland Barthes, "Myth Today", in *Mythologies*, trans. Annette Lavers (New York: The Noonday Press, 1991), p. 107.

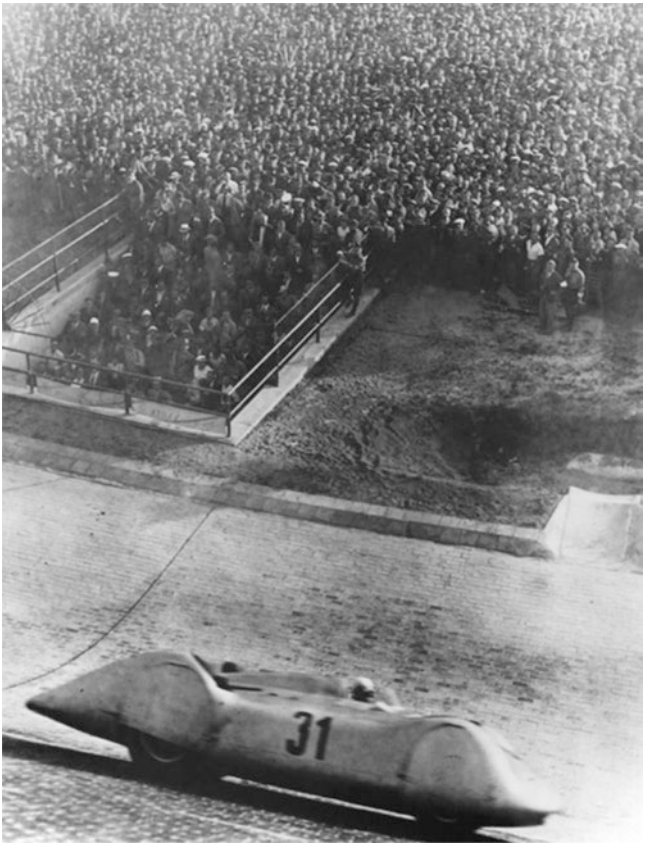

Fig. 2.4 Grand International Automobile Race 1937: Racing driver Bernd Rosemeyer passes through the northern curve of the Avus. Speed, engine power and the competition between the drivers made the car races an exciting, bond-forming event of mass culture. (Source: Landesbildstelle Berlin)

Symbolization of Social Status and Prestige

Whereas the first motor vehicles were basically carriages with a rear-mounted engine, around 1900 an independent form of the car developed (Petsch 1982: 36). In touring cars, the engine was now at the front and the body formed a space for the driver and passengers. A culturally determined form of representation was created from the technically determined functional form. However, this was in keeping

with older conventions, with courtly society providing the clearest example, where hierarchies of rank and prestige had been represented in the form, fittings, comfort and decoration of carriages. In 1899, the American cultural sociologist Thorstein Veblen had placed these ways of dealing with status objects in the context of an historical anthropology, formulating it thus: "The conspicuous consumption of valuable goods is a means of reputability to the gentleman of leisure" (Veblen 1986: 47).[14]

Form of Representation

Following this tradition, the car soon assumed the function of symbolizing the position of its owner in society. The glamor of a designer automobile body provided another medium to express the need for distinction of the monied aristocracy and of aristocrats by birth (Fig. 2.5). In order to offer the flair of exclusivity, the designers also used traditions and art forms which, with their connotations of stylistic elegance, also guaranteed distinction in relation to simple mass-produced products, using a

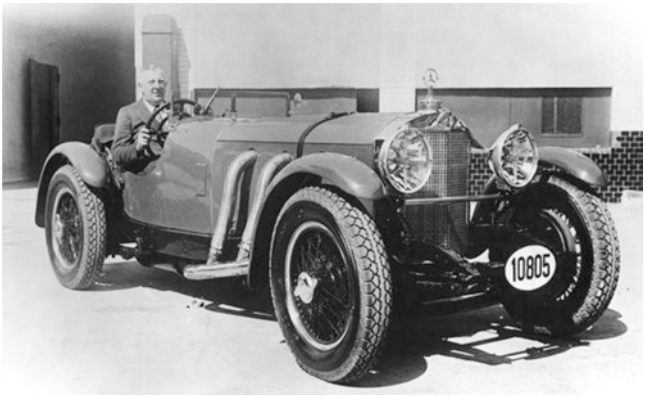

Fig. 2.5 In the Mercedes S sports car, the elongated engine block and the massive radiator demonstrated the power of the machine. A company specializing in automobile bodies equipped this one with designer elements such as the chrome exhaust pipes, which increased the prestige and made the car a medium of social distinction for the upper classes (1920s). (Source: Landesbildstelle Berlin)

[14] Thorsten Veblen, *The Theory of the Leisure Class*, Dover Publications Inc., Mineola NY, 1994.

wide spectrum of aesthetic forms, ranging from chrome on the radiator grille to ornamental scrollwork and white-wall tires.

Expressiveness of Form as Social Communication

The aesthetic expressiveness of the form also served the purpose of social communication, as a sign of an elevated position in society. In the course of the history of objects in the twentieth century, the car thus became a medium and symbol of socio-historical structures. Wealthy businessmen were already among the early car owners when it still possessed the aura of the new and signalled progressiveness, but on the other hand presupposed middle-class income to cover the cost of maintenance. Only in the process of mass motorization after the Second World War did white-collar employees and workers achieve a symbolic ascent in society, namely through their image as consumers.

For upwardly mobile people, the change from a small to a middle-class car—for instance, from the *Beetle* to the *Opel Record* or the *Ford Taunus*—connoted a prestige-bearing representation of individual progress. In many cases, these effects of mass motorization were later interpreted as a symbolic expression of the dissolution of class society, since in the 1970s larger cars became affordable for skilled workers with higher incomes (Beck 1986: 123). Their purchase appeared to symbolize proximity to and affiliation with other drivers and owners of the same brand of automobile from the upper class. Any skilled worker, employee or civil servant with a middle income who parked a Mercedes in front of his house or apartment was thus placing a status signal in public space and in his own residential environment.

The Car as a Signifier of Social Hierarchies

The increasingly widespread ownership of exclusive cars relativized their suitability as a sign of social class and position, but the "fine distinctions" (Bourdieu) merely shifted into the differentiations in the manufacturer's product range and the price hierarchy. For example, while the cheaper Mercedes models were only just accessible to skilled workers who earned a good living, the expensive upmarket models were still reserved for those in management and for company owners. The car thus continued to serve as a signifier of social hierarchies. Of course, the use of dark-colored limousines suggesting an aura of authority by members of the functional elite of business life was not limited to the purpose of driving to a meeting

with a business partner. Rather, the symbolic-aesthetic dimension of a differentiated sign system enters into the choice of the type of automobile: the brand and the car's features must primarily express the internal position of the company representative or manager in relation to his business partners, but at the same time represent the company itself to the outside world.

The official cars of state office-holders were in any case mostly custom-built, commensurate with the aesthetic representation of state power and the dignity of the office-holder. The large Mercedes of Federal Chancellors Konrad Adenauer and Willy Brand can serve as illustrative examples.

Automobile Design and the Imagery of Civilization

The design of automobile bodies also included early visualizations that represented metaphors of progress typical of the period. I would like to use a few examples to illustrate the connection between cultural contexts and the specific meanings of the form of automobiles.

One of the first sculpture-like forms to emerge for cars with powerful engines was an elongated hood that visually illustrated the power and direction of movement of the underlying "horsepower". The so-called "boat style" developed around 1910 into a form typical of the period, which can be viewed in the context of the emphasis on technical civilization, but also against the historical background of the German Empire prior to the First World War. Modern ships were regarded as symbols of modernity due to their speed and technical perfection as well as their functional design. Therefore, the adoption of the boat form for automobile bodies is to be interpreted as bestowing on the car multiple layers of prestige: it combined the connotations of progress, rapid movement and modern technical rationality with the stylistic ideal of functional elegance and the canon of Imperial values.

Two decades later, another form of civilizational imagery emerged, namely the streamline. With increasing speed, reducing air resistance became a central criterion for improvements in the shape of the automobile. Reducing flow resistance and the speed thus gained became the starting point for the new aesthetics (cf. Burkhardt 1990: 221 ff.). As early as 1909, the body design of the world record-holding car, the *Blitzen-Benz*, was determined by aerodynamic forms. The torpedo shape and the drop shape were regarded as ideal parallels to the ultra-modern construction of the Zeppelin.

Streamlined Form

At the end of the 1920s, the streamlined form emerged, the cultural semantics of which were rooted in rapid mobility. In the 1930s, the stylistic features of the flowing lines that had developed from functionality—for example elongated mudguards—became an aesthetic form in their own right, illustrating the fascination of speed as a dimension of the myth of technology (cf. Lichtenstein/Engler 1992). The designers soon also used the streamline for immobile objects such as pencil sharpeners, radio sets or refrigerators. This form represented a promise of modernity typical of the period, but also the functional aspiration to overcome individual problems with ease in the everyday framework of an ever more advanced mass culture.

Although of European origin, the streamline was increasingly cultivated in the USA in the 1930s and finally returned in the 1950s with the American objects of mass culture in the "dream car style" as a fashion typical of the time. In this context, the streamlined, chromed "street cruisers" with shark mouths signaled the increased standard of living. In the 1950s, various models of the Opel *Record* or the *Captain* were designed with this imagery in mind.

Individual Taste and Subjective Identity

For a long time, the increase in the comfort of "modern man" remained identical with belonging to the wealthy upper class. The popular phrase "being able to afford more" was a cipher for social advancement and referred to the reality of social inequality as well as to the unequal chances of being able to afford the objects of material culture. However, to the extent that the significance of merely belonging to the community of motorists was relativized with the completion of mass motorization, the forms of expression of individual taste increased in importance in mass society.

Ever since the development of the specific form of the car, there had been low-volume brands and custom-made products that represented the desire for individualization of their wealthy owners. The distinctive features of such luxury models were expressed in an aestheticized form. At the same time, the tendency towards uniformity of serial mass production was accompanied by a desire for distinctiveness on the part of those in low-income occupational groups.

A selection of industrially manufactured extras, special designs and spoiler rings offered forms of expression for the individualization of serially-produced

cars. With the help of parts offered by the manufacturer or the accessories industry, the owner was able to engage in a process of aesthetic appropriation and design. In the interior, the remodelling of the seats served not only to increase comfort or tailor them to the individual body, but also to furnish the car as an individualized space (cf. Csikszentmihalyi/Rochberg-Halton 1989: 47). In the 1950s, for example, it was common to decorate the dashboard with a vase for flower arrangements or with a talisman. The application of stickers with local emblems, advertising slogans or political statements developed into a symbolic form of ownership of the car. A hand-knitted cushion with the registration number of the vehicle on it, placed in the storage space under the rear window, was a common way of providing the mass product with a personalised, individual touch.

Symbolic Forms of Ownership

Power and Freedom

Driving practice is to a large extent determined by the ways in which the individual exercises control over his emotions. The driver's power over the process of acceleration, over a force that produces movement, has always been a temptation to act out non-rational, unconscious needs. Placing one's foot on the accelerator releases power that is many times stronger than the power of the driver's own body. The abreaction of pent-up aggressiveness has thereby become a far from rare experience in anonymous mass traffic, although the reasons for it are to be found outside the human-machine relationship, mostly in everyday relations. As a result, multilayered forms of the symbolic demonstration of power over the machine figure among the forms of behavior in traffic: ostentatious acceleration and showy self-display on the part of the driver through a roar of the engine, driving at spectacular speeds and the intimidation of a weaker and slower vehicle by a stronger one are all expressions of the desire for power.

Expressions of the Desire for Power

There is no doubt that this applies in a gender-specific way predominantly to male road users.

On the other hand, because of its practical characteristics and uses, at a surprisingly early stage the car was associated with the symbol of freedom, which Bierbaum explicitly foregrounded back in 1906 in the following passage:

> The railroad has turned the traveller into the passenger, the passenger who is passing through. But now we don't want to go past all the beautiful sights without stopping, simply because they are not envisaged in the timetable. We really want to travel once more as free men, choosing our destination freely, for pleasure purposes. […] Travelling in a car involves not only a physical but also a mental massage, and this is precisely where its invigorating, freshening qualities lie. Passive travel is replaced by active travel. (Bierbaum, 1906: 333)

In the course of asserting this semantics of freedom, the slogan "unrestricted mobility for free citizens" (*freie Fahrt für freie Bürger*) became very popular in the 1960s. It assigned priority to the claims of individual expression over the restrictions imposed by the collective interests of society. Above all, the absence of a speed limit on the motorways was endowed with a pathos of freedom that included a radical lack of connection to the consequences of driving a car. In this situation, the emotional attachment to the car as object, the power over speed and the unlimited freedom to act it out were ideologically highly regarded. Whether this was especially true in Germany due to a lack of liberal political culture, as an expression of the achieved fulfillment of the stronger individual, would need to be explored further.

Semantics of Freedom

Power Over Speed as a Highly-Regarded Ideological Value

Concluding Remarks

Criticism of the automobile was kindled by the consequences of its quantitative expansion. In the 1980s, with mass motorization and mass tourism, the negative consequences, such as the increase in exhaust fumes, reached an extent (forest dieback, contribution to the heating of the earth's atmosphere, etc.) that provoked discussion about alternatives to the automobile, but at the same time revealed that only solutions that lie within the configuration of rapid mobility stand a realistic chance of acceptance and implementation. The structural requirement of mobility in a society based on the division of labor, but also the rationalization of individual mobility as a gain in enjoyment of life, are both so deeply rooted in modern culture that the need to restrict car traffic quickly reaches the limits of enforceability.

The electric car could contribute to rendering viable two approaches to restructuring the culture of individual mobility. This concerns, firstly, the idea of dividing urban space into zones authorized for gasoline-powered cars and zones where this is not the case. If the latter were to be approved for the operation of electric cars,

this could significantly reduce resistance to the establishment of "prohibited zones". Furthermore, the electric car is suitable as a sensible component of integrated solutions, i.e. the combination of transport systems in the rail and road network. One would take the train in order to travel to the outskirts of the city, while individual mobility in the city centre would be dependent on the electric car, whose technical features make smooth and comfortable travel over short distances possible, without even minor hindrances. The transfer stations from the railway to the electric car could be comprehensively equipped with charging stations, so that the unavoidable downtimes of the cars in the park-and-ride system could be used for the battery charging process. In any case, new types of electric cars would have to be developed, geared to the practical values anchored in the configuration of modern everyday culture. A complete renunciation of the desire for distinction and the representation of status seems unlikely, given the mentality handed down in cultural history and the forms of contemporary culture in which the needs of car purchasers are inscribed and acted out.

Precisely because the automobile as an object of individual mobility is highly unlikely to be replaced, the electric car plays a special role in the transformation of older forms of mobility into culturally forward-looking forms of mobility, in order to contain the negative consequences of this "leading fossil" of modernity that have arisen in the object's more than century-long history (cf. Aicher 1984).