Entrenched Habit or Fringe Mode

Citation for published version (APA):

Document status and date:
Published: 01/01/2019

DOI:
10.1163/9789004289970_004

Document Version:
Publisher's PDF, also known as Version of record

Document license:
Taverne

Please check the document version of this publication:

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Download date: 15 Sep. 2023
Entrenched Habit or Fringe Mode: Comparing National Bicycle Policies, Cultures and Histories

Harry Oosterhuis

Introduction

From the First World War until the 1960s, the bicycle was a popular means of personal transport all over Europe. After the volume of pedalling traffic peaked in the 1950s, it was rapidly outstripped by motoring. In many countries, the share of the car in the total number of traffic movements (modal share or modal split) would surpass that of the bicycle by around 1960—a development that came about earlier in North America. Cycling seemed out-dated and headed for an all-time low. However, since the 1970s, when countercultural criticism of technocratic car-geared systems and bicycle activism arose, it has regained support among the general public as well as from governments. Worries about energy depletion, environmental and noise pollution, traffic congestion and safety, ill health and obesity, social exclusion and insecure streets, have entailed a re-evaluation of the two-wheeler as a clean, silent, sustainable, healthy, flexible, inexpensive, democratic and humane vehicle. Its modal share increased again, in some countries and cities more sharply than in others, but nowhere did it reach the 1950s level. Over the last two or three decades, national governments and cities throughout the western world, have launched ambitious policy statements and programs aimed at promoting cycling. Apart from students in university towns, the bicycle’s popularity increased in particular among young and well-educated residents of cosmopolitan cities. Also, it won a prominent position in the marketing of popular tourist destinations such as Paris, Amsterdam and Barcelona, and even of traditionally bicycle-unfriendly cities such as London and New York.

All of this has nourished the belief that the western world is witnessing a “bicycle renaissance” and “a veritable bicycle boom”.\textsuperscript{2} Policymakers, policy-oriented bicycle researchers and cycling activists seem quite optimistic about the possibilities to increase the bicycle’s modal share in daily transport for short-distance trips (up to 5 or 7.5 kilometres) by means of infrastructural engineering and programs for bicycle promotion. Bicycle policies have been introduced not only in countries with relatively high cycling levels (Netherlands, Denmark, the Flemish part of Belgium, Germany and Finland, and, to a lesser extent, Sweden, Norway, Ireland, Austria and Switzerland), but also in countries with low volumes of cycling (Great Britain, the United States, Canada, Australia, France, and Italy). By way of contrast, in the eastern part of Europe, where recent trends point to declining levels of pedalling as a consequence of economic growth and fast growing motorized traffic, and also in Spain, Portugal and Greece, bicycle policies, if in place at all, are still in their infancy.

The arguments reinforcing cycling policies are basically similar everywhere, but their implementation as well as actual wheeling levels reveal significant and persistent differences between countries. Around 2000, the bicycle’s modal share in passenger transport amounted to 27 per cent in the Netherlands and 20 per cent in Denmark. It varied between 7 and 12 per cent in Germany, Belgium, Austria, Switzerland, Sweden and Finland; between 4 and 5 per cent in Italy, France and Norway; and between 2 and 3 per cent in Great Britain, Canada, Ireland and the Czech Republic. And it stagnated at around 1 per cent in the United States, Australia, New Zealand, Spain, Portugal and Greece. The annual pedalling distance per capita in kilometres fluctuated between 850 and 1,020 in the Netherlands and Denmark; between 250 and 330 in Belgium, Germany, Sweden and Finland; between 140 and 230 in Ireland, 

Italy and Austria, between 70 and 100 in France, Great Britain and Greece; while it did not reach 50 in Portugal and Spain. Whereas all residents of the Netherlands and Denmark, on average, own a bicycle, the same goes for 3 out of 4 Germans; 2 out of 3 Swedes and Finns; about 1 out of 2 Belgians, Italians and Austrians; 1 out of 3 Frenchmen and British; 1 out of 4 Portuguese; and 1 out of 5 Spaniards. Also, the reasons for, and the appreciation of, pedalling show considerable variation. Whereas in countries with high volumes of bicycle traffic, a positive image and utilitarian purposes (commuting to work, school, shops and other activities and destinations) prevail, in countries with low cycling levels, more negative views abound on daily use of the bicycle and pedalling as a leisure time, sportive or childhood activity comes first.

These substantial differences between nations raise several questions. For one thing, what does the so-called “bicycle renaissance” imply, and what is its impact? Is it possible to explain variations in the frequency, purpose and appreciation of bicycle-use on the basis of geographical and climatological conditions, environmental and infrastructural planning, demographic characteristics, habits in mobility, and the image of the bicycle? What is the impact of cycling policies in various countries? Are they effective at all?

This chapter considers these issues on the basis of a meta-analysis of social-scientific and historical bicycle studies as well as policy documents. First, I discuss policy-oriented research into the factors that advance or impede bicycling. Next, I argue that this research and the associated policy plans leave several of the questions unanswered, and that some of their basic assumptions

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4 Huwer, “Let’s Bike”, 43.
should be brought up for discussion. As I will show, policymakers and bicycle researchers largely ignore the historical and national-cultural dimension of cycling. My claim is that this overlooked aspect is highly relevant for explaining international differences in both cycling levels and the effectiveness of policies. This will be demonstrated by comparing diverging cycling patterns among Western countries, and explaining how they are rooted in the past. In this way, my argument seeks to bridge the gap between bicycle policies and the interrelated social scientific research on the one hand and cultural-historical studies of pedalling on the other.

2 Determinants of Bicycling

The growing concern for bicycling in the transport policies of many western governments in the last three decades has boosted social-scientific bicycle research in the field of mobility, traffic engineering and urban planning. Quantitative and statistical methods—in particular, measurements of traffic movements and surveys—have been predominant in this research. Central concerns pertain to why people either use or do not use the bicycle (in particular for utilitarian purposes) and how cycling can be facilitated and promoted. Strikingly, most of these studies have appeared in the United States, the United Kingdom and Australia, where bicycle levels are fairly low, while Dutch, German, Belgian, Danish and other Scandinavian scholars also figure prominently. My argument is based on an analysis of more than two hundred published and unpublished research papers and several policy documents, mostly produced in the last two decades.

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5 The considerable variations in cycling volumes between regions or cities within countries are beyond the scope of this chapter. See, however, Stoffers and Ebers, “New Directions”.

6 Within the confines of this chapter, I can only refer to a selection of these studies.

Based on my reading of the research reports, the following six factors that advance or impede cycling can be distinguished: (1) natural conditions; (2) land use patterns and built environment; (3) demography; (4) traffic infrastructure; (5) individual motivation and (6) ingrained and taken for granted collective habits (*habitus*) with respect to mobility. Four of these determinants cannot be changed through direct and purposive human intervention, at least not in the short term: they largely depend on the forces of nature (1) or they have taken on a more or less fixed shape in long-term historical developments (2, 3 and 6). In principle, it is possible for traffic infrastructure and individual motivation to be influenced more or less directly in the shorter term through goal-oriented policy measures. Policy as such—the choices and priorities made and the way it is implemented—can be considered a possible immediate influence on pedalling levels in its own right.

The basic assumption of cycling policy is the more or less optimistic idea that riding bicycles can be stimulated by technical and social design. Policymakers, planning experts, and policy-oriented bicycle researchers feel themselves challenged by two main problems. The first one is that people who do not use a bicycle for personal transport are hampered by material and environmental barriers, such as the dominance of motorized traffic and the lack of appropriate infrastructural facilities or other provisions. The second issue is that such people are not aware of the two-wheeler’s benefits because they lack experience with it and have the wrong ideas about it. The engineering and planning approach implies the belief that these problems can be tackled by implementing the appropriate measures based on scientific (in particular quantitative) knowledge and expertise. This way of reasoning also presupposes to a large extent that people’s decisions as to whether or not to pedal is mainly based on an individual and rational-instrumental consideration of costs and benefits, and that such a choice can be influenced by adapting the

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physical environment, by promoting a positive image of cycling and by educating them about its advantages.

After a brief discussion of the main results of bicycle research with respect to natural conditions, land use and built environment, and demography, my argument centres on infrastructure, motivation and **habitus** in relation to policies. Finally, I turn to what is generally lacking in bicycle studies and planning: a consideration of the influence of history and (national) culture on pedalling.

3 Natural Conditions, Built Environment and Demography

Although considerable differences in altitude and extreme climates (hot as well as cold) seem to be major barriers for cycling, research shows that such natural conditions are not always a decisive factor and perhaps even play a subordinate role. The two-wheeler’s modal split is largest in Denmark and the Netherlands, more or less flat countries with a temperate (though also rainy) climate. Despite the cold winters, cycling levels are generally higher in Scandinavia than in several countries with a warmer climate. And even with their icy winters, Canadians on average pedal more often than Americans. Moreover, both the climate and the topography in Ireland, Eastern England as well as the North of France, Germany and Italy are not very different from those in the Netherlands and Denmark, but cycling levels vary substantially among these regions. Swiss and Austrian pedalling volumes are larger than those in several less mountainous areas.8

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There is evidence that spatial and urban characteristics (building and population density, the degree of (sub)urbanization and the dispersion or mixing of functions such as living, working, shopping and leisure, which determine commuting distances, have a greater impact on bicycle use than climate and topography. In general, trips of up to a maximum of 5 to 7.5 kilometres seem to be feasible for utilitarian cycling. The contrast between compact towns and inner cities in Europe and pervasive urban sprawl in North America and Australia partly explains the large differences in bicycle use. Some researchers point out that urban design and land use patterns are not independent variables because self-selection may play a role as well: areas with greater building density and lesser functional dispersion attract people who may choose the bicycle over the car in daily transport. Also, various degrees of urban compactness or sprawl may not only be a cause, but also an effect of higher and lower levels of pedalling and motoring respectively. In general, the influence of existing bicycle volumes and patterns on the built environment and people’s willingness to use the bicycle in daily transport tends to be underrated. The increase of automobility has advanced urban sprawl (most obviously in North America and Australia), while high numbers of cyclists (such as in Dutch and Danish and also other European towns) may stimulate higher building densities and the intermixing of economic and social functions. Moreover, there is evidence that the correlation between sizeable cycling volumes and high building density holds truer for smaller towns than for larger cities (over 100,000 residents), which usually have more elaborate public transport networks. There appears to be an inverse correlation, in other words, between the modal share of public transport and that of the two-wheeler in daily mobility.9

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In some countries, there is a significant correlation between the bicycle’s modal split and particular demographic characteristics of the population (age, gender, income, education, religion, family composition, lifestyle, ethnicity and political affiliation), but in other countries such a correlation is weak or almost non-existent. If in countries with low cycling levels—such as the United States, Canada, Great Britain and Australia—men, youngsters and students are strongly overrepresented among wheelers, while also in France and Belgium more men than women pedal, countries with large (Netherlands and Denmark) or moderate (the rest of Scandinavia, Germany, Austria and Switzerland) cycling volumes show a stronger correspondence between the demographic traits of bicyclists and those of the general population. In some countries, young metropolitan professionals are overrepresented among wheelers, while in general ethnic groups with non-Western roots seem under-represented. Researchers have found no straightforward correlations between bicycle use and such demographic variables as education, wealth, income, family composition, religion, and car ownership; such correlations are usually weak and vary between countries. However, there are indications that

lifestyle, social environment, and status sensitivity or egalitarianism are relevant. The difference between the Netherlands and Belgium in this respect is striking indeed. In Belgium, people with lower education and lower income levels are overrepresented among bicyclists. For Belgians, it seems, pedalling in daily commuting is much more strongly linked to social status than for the
Dutch. At the same time, some researchers have noted that the education levels of American, British, Australian and Danish bicyclists are above average.\textsuperscript{11}

Generally speaking over the last decade, bicycling has gained more status as part of the trendy lifestyle choices (“cycle chic”) of a metropolitan and well-educated “creative class” in many parts of the Western world. The notion of a recent bicycle-renaissance appears to be related to gentrification and neoliberal consumer capitalism as well as to a privileged middle-class perspective on pedalling. The increasing popularity of riding expensive, stylish and technically advanced bicycles among “yuppies” in some large European and American cities and the associated middle-class cycling activism may be at odds with the interests and attitudes of lower class citizens. Whereas the first group can afford to live close to their jobs in expensive uptown neighbourhoods and does not view driving as relevant for their social status, the lower class (including deprived ethnic groups), which is increasingly shunted to the cheaper peripheries, cannot and probably does not want to reduce its dependence on motorized traffic—at least if they do not cycle out of sheer necessity because they cannot afford motorized transport.\textsuperscript{12}

Against this background, in the United States the construction of new urban cycling facilities sometimes evokes aversion among lower class, black urban residents who feel that they are elbowed out of their neighbourhoods. Therefore it is questionable whether bicycle policies always serve the interests


of the financially weak who are pushed back to the outskirts of cities without such facilities and without adequate public transport. Anyway, this reversal of the post-war image of the two-wheeler as a poor man’s vehicle qualifies the idea that it is by definition an egalitarian and emancipatory means of transport.\textsuperscript{13} Whereas in the lower class and non-Western ethnic perspective driving still bestows social status and cycling is second-rate, younger parts of the privileged urban middle-class, who experience pedalling as convenient and enjoyable, feel that car-ownership is no longer relevant for their social standing.

4 Infrastructural Facilities

Traffic systems, infrastructures and other material provisions have received much attention in policy-oriented bicycle research, in particular because they can be purposively (re)shaped by means of planning and engineering. This category includes traffic rules and speeds for motorized and pedalling traffic; whether cyclists are segregated or not from cars on the one hand and from pedestrians on the other; the availability of (secure) parking space and its cost for cars and/or two-wheelers; the presence of bicycle ways and lanes, car restricted zones, marked routes and networks, separate bridges, viaducts, tunnels, traffic lights, repair shops, changing rooms and showers in the workplace, and storage capacity for bicycles at home. Additional elements in this category are bicycle rental facilities, adjusting public transportation to pedalling, and the costs and taxation of various modes of transport.

Existing traffic systems and infrastructures offer more or less possibilities to add specific modifications and amenities for cyclists. Many policymakers and bicycle researchers assume that the construction of facilities that make cycling efficient, comfortable, pleasant and safe will result in increasing numbers of people opting for the bicycle in daily commuting. Some of them display an unshakable optimism about the possibilities of promoting pedalling through infrastructural and traffic measures. Typically for many American bicycle experts, a leading professor of urban planning, John Pucher, strongly believes that “bicycling can be increased even under quite unfavourable circumstances,\textsuperscript{13} Timothy A. Gibson, “The Rise and Fall of Adrian Fenty, Mayor-Triathlete: Cycling, Gentrification and Class Politics in Washington, DC”, Leisure Studies 34, no. 2 (2015); John Stehlin, “Regulating Inclusion: Spatial Form, Social Process, and the Normalization of Cycling Practices in the USA”, Mobilities 9, no. 1 (2014); Karel Martens, “Role of the Bicycle in the Limitation of Transport Poverty in the Netherlands”, Transport Research Record 2387 (2013).
provided the right public policies are implemented.\textsuperscript{14} He claims that the high cycling levels in the Netherlands, Denmark and parts of Germany as well as in some cities in other countries, are largely caused by policies and the wide availability and good quality of infrastructural facilities. A similar approach would be the solution for countries with little bicycle traffic.

In order to find out whether infrastructural adjustments and facilities indeed have encouraged (utilitarian) cycling, researchers have investigated to what extent and by whom they are used. Some of them have established a correlation between improved bicycle routes and networks and an increased modal share of the two-wheeler, but only under an array of specific conditions. Cycling paths and lanes should provide direct and continuous connections and they should be part of a larger network, which should be located not too far from a cyclist’s point of departure and destination. The road conditions should be good for pedalling and the routes should avoid steep climbs, and the number of traffic lights and busy intersections with car traffic should be kept to a minimum. Furthermore, the stimulating effect of facilities on bicycle levels seems not to be the same among all user groups. It is stronger among relatively inexperienced cyclists, the elderly and women than among experienced and sporty riders, including many younger men. The first group pedals prudently and prioritizes the (assumed) safety of segregated facilities, while the latter group, characterized by a more assertive driving style, prefers to take roads with motorized traffic if that saves them travel time.\textsuperscript{15} Also, more as a


\textsuperscript{15} Cathy L. Antonakos, “Environmental and Travel Preferences of Cyclists”, \textit{Transport Research Record} 1438 (1994); Robert B. Noland and Howard Kunreuther, “Short-Run and Long-Run Policies for Increasing Bicycle Transportation for Daily Commuter Trips”, \textit{Transport Policy} 2, no. 1 (1995); Shafizadeh and Niemeier, “Bicycle Journey-to-Work”;
general rule, Dutch and Danish findings have revealed that a clear causal link between infrastructural policies and an increase in cycling can only be demonstrated if pull measures such as installing cycling networks are combined with push measures such as constraining traffic regulations for motoring and a substantial rise of parking rates for cars in town centres.16


Other studies have further questioned the assumption that infrastructural policies bring about an increase in bicycle traffic. It is difficult to determine the precise impact of facilities on bicycle use: finding a correlation between the cycling volumes and the presence of cycling routes and other amenities is not the same as proving that the construction of facilities causes an increase of pedalling. There may be a tendency in bicycle research to underestimate or even overlook the impact of existing wheeling levels on other relevant factors. Instead of infrastructure triggering an upsurge of cycling levels, policies aimed at building and improving facilities can also be a result of existing bicycle practices or the preceding rise of the two-wheeler’s modal split, which may have been advanced by other factors. A growing number of cyclists may entail an increasing need and demand for adapting the traffic system and built environment and a greater willingness of governments to meet such pressure, in particular if it is articulated by well-informed and vocal bicycle activists and lobbyists. Self-selection should also be taken into account: individuals who are motivated to pedal, may prefer to settle in a bicycle-friendly neighbourhood or area. In this light it is difficult to determine the extent to which bicycle use is influenced by the available infrastructure or the composition of the population, individual preferences, lifestyle, perceptions, attitudes and habits. An American study even concludes that there is no clear evidence for a correlation between infrastructure and cycling levels, and that demographic factors are far more relevant. The authors assert “that people who cycle do so irrespective of a supportive transportation infrastructure. Such commonly accepted

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route-related correlates of cycling as bicycle lanes, traffic conditions, and street connectivity ... remain insignificant".18

Some longitudinal studies, which compare cycling levels before and after installing new bicycle facilities in several American cities, show that their construction did not result in a substantial growth of (utilitarian) cycling. To be true, modest increases (especially of recreational cycling) were sometimes realized, but these seem to have occurred only in neighbourhoods where the bicycle’s modal share was above average already before the new facilities were put in. Conversely, in the suburban outskirts, where bicycle levels were lowest to begin with, little change was accomplished, if the number of wheelers did not in fact go down.19 German and British studies comparing the widely divergent levels of bicycle use among commuters and school children in several cities demonstrate that no direct causal link can be established between, on the one hand, cycling volumes and whether or not pedalling is a matter of course, and, on the other hand, the existing traffic infrastructure and current cycling policies.20 The results of a British survey-study suggest that the construction and improvement of cycling facilities hardly brought about an increase in pedalling commuters.21

Overall, in countries with low average pedalling levels, such as the United States, Canada, Australia and Great Britain, the implementation of bicycle policies—the construction of infrastructural facilities and also the launching of promotion campaigns—have failed to generate substantial increases of utilitarian cycling, apart from a few local exceptions. The number of Brits, Americans, Canadians and Australians who cycle on a daily or regular basis does not exceed 2 per cent of the population, and the past fifteen years have even witnessed a decline in utilitarian two-wheeler traffic, despite the implementation of cycling policies.22 In these countries such policies do not find

20 Marcus Jones, “Promoting Cycling in the UK: Problems Experienced by the Practitioners”, World Transport Policy & Practice 7, no. 3 (2001); Goetzke and Rave, “Bicycle Use”.
fertile ground in an established and widespread daily practice, and they tend to be at odds with the wider environmental and infrastructural planning, as well as with comprehensive transport policies. Inasmuch as cycling facilities have been put in, these are patchy and mainly geared to recreation and sports; for practical commuting purposes they hardly prove effective. Continuous cycle routes and networks for everyday utilitarian mobility are few and far between, whereby many people still view and experience cycling as stressful and dangerous. 23 Thus cycling remains limited to the minority of the extraordinarily motivated.

Bicycle policies seem to be more fruitful in countries where cycling levels are high already and riding a bicycle is a well-established and time-honoured practice, but their results have to be put in perspective. German studies suggest that bicycle traffic saw its largest growth before city governments, in the 1980s, and the Federal Government, from 2002 on, introduced policies to promote cycling. Other developments appear to have advanced pedalling: greater environmental awareness, increasing traffic congestion, rising fuel prices, citizens’ initiatives, local activism and urban expansion, which entailed that the distances covered in daily traffic increased and people who used to walk changed to pedalling. 24 Similarly, the relation between, on the one hand, the internationally renowned Dutch policies and, on the other, the increasing cycling volumes since the mid-1970s, followed by a slight decline between the mid-1980s and mid-1990s and the stabilization of the modal split at around 27 per cent, is far from unambiguous. After some cities had started to build bicycle routes and networks and to ban cars from town-centres, and the central government began to subsidize the building of bicycle ways next to main


23 Krizek, Forsyth, and Baum, Walking and Cycling, 37, 40; cf. Horton and Parkin, “Conclusion”.

roads, in the second half of the 1970s and early 1980s the total number of pedalled kilometres by the Dutch rose by 35 per cent. However, the introduction of bicycle policies on a national scale in 1990, when the Bicycle Master Plan was launched in order to expand and improve the existing cycling infrastructure, was not followed by a further substantial increase in bicycle use. Whereas over the past decade bicycle traffic has increased considerably in Dutch inner cities, partly as a consequence of measures to discourage car use there, at the same time the two-wheeler lost ground to the car and public transport in rural and suburban areas. In the 1980s and 1990s, the number of kilometres travelled by car continued to grow sharply and its modal share rose from almost 46 to 49 per cent between 1980 and the mid-1990s. The net result of Dutch cycling policy during the last two decades is that the bicycle’s modal split has remained at a similar level. Without cycling policy and car-restricted urban zones it would probably have decreased.25

The same is true of Denmark where the bicycle’s modal share has dropped slightly since the late 1980s, while that of car and public transport continued to rise.26 Apparently it is difficult to achieve a further growth of cycling even


in Holland and Denmark, perhaps for the very reason that the two-wheeler’s modal share in daily traffic is already so large compared to other countries.\textsuperscript{27} Cycling policies may have exhausted their potential: the Dutch and Danes who still do not bicycle will probably, for several reasons, never do so. Danish and Dutch bicycle policies, which are a shining example for many bicycle advocates, researchers and urban planners in other countries, apparently have not so much brought about a substantial rise of the bicycle’s modal share. The result is rather a continuance and facilitation of the existing cycle traffic at the same steady level, while also having made cycling more convenient, safe and enjoyable for the fairly large numbers of people who used to pedal anyway.\textsuperscript{28}

\section*{5 Attitudes, Perceptions and Habits}

Policy-oriented bicycle research used to be dominated by traffic engineers and mobility experts, who focused on technological and infrastructural problems and solutions, and showed little interest in the experiences of cyclists and the social meanings of pedalling. More recently, however, a growing number of scholars have begun to criticize the one-sided emphasis on the “hard” material conditions of cycling, particularly infrastructural facilities, which would go at the expense of “soft” interventions, like information, education, promotion and marketing, aimed at improving the image and status of the two-wheeler. These scholars have drawn attention to the individual motivation as

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to whether or not to use the bicycle for transportation. Two perspectives can be distinguished in their studies. The first assumes that the choice for a mode of mobility is based on a rational-instrumental assessment by individuals of its costs and benefits in the light of their circumstances and available options. The bicycle’s usefulness in daily commuting is central in this perspective. The second perspective centres on the influence of so-called affective motives (norms and values, beliefs, perceptions, attitudes and habits) that are largely shaped by the social environment and the wider culture. This perspective, which dovetails with more general pleas for a cultural turn in transport and mobility studies, stresses that cycling experiences are moulded in various ways and that they cannot be reduced to economic and other utilitarian considerations. 


31 Anable and Gatersleben, “All Work”; De Geus et al., “Psychosocial and Environmental Factors”; Heinen, Van Wee, and Maat, “Commuting”; Goetzke and Rave, “Bicycle Use”. See also Bas Verplanken et al., “Attitude versus General Habit: Antecedents of Travel Mode
Some English studies indicate that deciding whether or not to cycle is closely linked to the perception of benefits (fun, fitness or health, low costs, flexibility and relatively fast on short distances) and disadvantages (slow on long distances, too much physical effort and sweating, too much climbing, exposed to speedy motorized traffic and bad weather, and loss of social status). People who never pedal predominantly perceive insurmountable obstacles and policies will not change this perception. Interventions only lead to behavioural change if people already have considered the possibility of riding a bicycle, have cycling experience or have a positive view on it, thus reducing objections such as discomfort and safety-risks. These studies also make clear that cycling experience among regular and motivated cyclists is linked to positive feel-

ings: relaxation and fun, a sense of independence, freedom, self-confidence, self-control and flexibility, a pleasant sensory stimulation because of the exercise and being in the open air, the intense perception of and interaction with the environment, and pleasant childhood memories. On the other hand, many Brits who do not pedal can only see cyclists as reckless daredevils and accident-prone persons, who are responsible for trouble and dangerous situations in traffic. They also regard cycling as unaesthetic and uncomfortable, as “hot and sweaty” and associate it with athletic (or not so athletic middle-aged) men wearing helmets and Lycra outfits. Anxieties about bodily performance and appearance impede many women and non-western immigrants to pedal.

More in general, research of motivation makes clear that the decision whether or not to cycle is usually not taken exclusively on the basis of a calculation of costs and benefits and explicit views, but that it is also inspired by more intuitive perceptions, experiences and valuations. For this reason, several researchers have put the difference between instrumental and affective motivations into perspective. They argue that instrumental choices can only be understood in the context of affective motivations. In daily practice apparent objective cost and benefit assessments are usually imbued with subjective perceptions of advantages and disadvantages. Such perceptions are embedded in habits, routines, experiences and attitudes. When it comes to a cost and benefit assessment, for example with regard to the investment of time, the physical effort, the health effects, the (in)convenience, the (in)efficiency, the (lack of) safety and the financial costs or yields of cycling, judgments vary considerably between regular cyclists and people who hardly or never pedal. The last group identifies far more drawbacks—riding a bicycle is believed to be uncomfortable, too strenuous, too dangerous, too slow, or too individualistic; the weather and the roads or bicycle ways can be bad; no luggage and other passengers can be transported; it is difficult to communicate with traveling companions—than the first group and also evaluates the environmental conditions for bicycling more negatively. Promotion campaigns aimed at

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35 Noland and Kunreuther, “Short-Run and Long-Run”, 75–76; Peter Gordon and Harry W. Richardson, “Bicycling in the United States: A Fringe Mode?” *Transportation Quarterly*
boosting the bicycle’s image have a similar effect as building facilities: they mainly attract people who already cycle and who do not have to be convinced of the practical usefulness and fun of pedalling, while their impact on people who rarely or never ride a bicycle is limited or none.36

The positive or negative evaluation of cycling and the associated perception of its benefits and difficulties by individuals are also determined by the attitudes in their social environment and whether cycling is part of the learned pattern of daily habits, whether or not one has grown up with bicycles as a common means of transportation. Through a mutual influencing and enhancement of experiences with and perceptions of cycling, a self-fulfilling prophecy appears to be working here. A positive or negative image of cycling implies that either its pros or cons are stressed. These perceptions determine whether or not one chooses the bicycle for commuting and whether or not one develops cycling experience. And experience, in its turn, determines perception again. Opting or not opting for pedalling is embedded in an accumulation of corroborating and reinforcing meanings, perceptions, experiences and behaviours.37

6 The Relevance of History and National Culture

All in all, the available research offers no conclusive evidence that cycling increases substantially as a result of infrastructural planning and promotional activities. That is not to say that such policies are futile and would have to be discarded. At least they may counterbalance several social, economic and technological dynamics that all over the western world structurally impede pedalling: spatial up-scaling and increasing mobility over greater distances furthering car-driving and the use of public transport; the continuing (neoliberal)


36 Transport for London, Cycling, 40.


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prevalence of efficiency, speed and economic values; the regular priority of motorized transport in traffic policies; growing prosperity and car ownership; and the proportional increase of the ageing population and non-Western ethnic minorities.\textsuperscript{38}

Be that as it may, the diverse findings and partly uncertain conclusions of the authors in the field of social-scientific and traffic engineering studies of bicycling, tacitly rather than explicitly, call into question the basic premise of cycling policies: the belief that cycling can be advanced directly and in the short term through targeted technological and social interventions. To a large extent pedalling levels seem to be determined by factors which are not amenable to rational decision-making and planning: geographical, climatological and environmental conditions, demographic characteristics, socially and culturally determined attitudes, experiences, habits and perceptions, and the popular image and social status of the bicycle. It is not entirely clear how these factors influence bicycle use, what their relative weight is, how they interact, and how they affect the outcomes of bicycle policies. Moreover, what is lacking in policy-oriented bicycle research is the consideration that most of the relevant determinants—land use patterns, the built environment, and traffic infrastructures, attitudes and motivations, meanings and perceptions, and habits and routines—have taken shape and evolved in long-term, path-dependent developments\textsuperscript{39}—and also, largely, in the context of the modern nation state.

There are good reasons to question the assumption that the travel behaviour of people can be changed in the short term through targeted policy measures. In their historical research on the development of British commuter traffic from the late nineteenth century, Colin G. Pooley and Jean Turnbull demonstrate that historical shifts in mobility patterns can be identified—for example, before the Second World War most people walked and cycled to work while after 1960 car-driving became dominant—but that within different periods individual travel behaviour showed a large degree of rigidity: few people switched to another means of transport. Their conclusion is that the individual’s choice for a particular mode of mobility is largely determined by habits and routines, many of which, in turn, go back to prevailing social practices and cultural values.\textsuperscript{40} Such findings suggest that the historical dimension of


\textsuperscript{39} Cf. Pelzer, “Bicycling”.

\textsuperscript{40} Pooley and Turnbull, “Modal Choice”, 15, 23; Colin G. Pooley, Jean Turnbull, and Mags Adams, A Mobile Century? Changes in Everyday Mobility in Britain in the Twentieth Century (Aldershot: Ashgate, 2005); cf. Scheiner, “Mobility Biographies”.

\textsuperscript{71} Entrenched Habit or Fringe Mode
bicycling is relevant and they question the assumption that policies can bring about substantial changes in pedalling behaviour, at least in the short term.

Strikingly, policy-oriented researchers have not taken notice of the many historical works on bicycling published in the past three decades—at least I did not find any references to such studies in their papers. Some of them refer in passing to the possible impact of history and culture, in particular if their surveys fail to establish correlations between wheeling levels and other factors, while at the same time they play down that influence. Typical is the assertion of John Pucher and his co-author Ralph Buehler that “policies appear to be far more important than history and culture in explaining ... cycling trends”. Comparing American and European cycling levels, they claim that “[t]he much higher levels of cycling in Europe are not simply historical artefacts or culturally determined”. Their way of reasoning suggests that policies can be made and implemented apart from historical and cultural contexts. Apparently, they do not consider that the more or less successful cycling policies and the extensive bicycle infrastructures in countries such as the Netherlands and Denmark could only be realized because of the bicycle-minded culture which had emerged and had been upheld in these nations since the early twentieth century.

Although more and more policy-oriented studies—more often implicitly than explicitly—suggest that the degree to which bicycle use can be substantially increased through policies depends on social-cultural contexts, only a few social-scientific researchers clearly acknowledge that historical factors may be highly relevant and deserve more serious attention. Considering research into the relation between policies and infrastructures on the one hand and the volume of pedalling traffic on the other, the American bicycle scholars Gary Barnes and Kevin Krizek, for example, have pointed out that local variations in cycling levels across different American regions and cities cannot be reasonably explained by differences in policies and infrastructures. “Unmeasured factors, perhaps cultural or historical”, they write, “appear to play an extremely large role in determining the level of cycling in an area”. In their conclusion

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41 See, e.g., the passing reference to “culture, custom and habit” in Pucher, Dill, and Handy, “Infrastructure, Programs, and Politics”, 121.
42 Pucher and Buehler, “Walking and Cycling”, 408.
they assert: “It seems that local or even ‘subcultural’ attitudes and perhaps history play a very substantial role in the perception of bicycling as an appealing or even ‘normal’ thing for an adult to do”. They add that “soft factors such as culture and attitudes” should be researched “in some systematic way”, without indicating, however, how this should be done. Together with Susan Handy and Ann Forsyth, Krizek also suggests that the disregard for history is related to bicycle researchers’ strong and optimistic belief in planning and design and their one-sided and possibly biased focus on the practical effects of their studies. Their work is, according to these authors, “fraught with practical challenges as well as political ones: expectations are high, interventions are modest, and effects may be unclear”, while planners and policymakers “have a responsibility to understand the limitations of the available evidence and not misuse that evidence in making the case for bicycle and pedestrian interventions”.

However, for Krizek and his co-authors this appears to be no reason to fundamentally question the basic approach and purpose of policy-oriented bicycle research and to take up his earlier suggestion that historical and cultural analysis should be included. On the contrary, in an evaluative survey he and his co-authors Ann Forsyth and Daniel Rodríguez call for more research along the established lines on the basis of more refined data collection and analysis, more sophisticated social-scientific theories and models as well as more precise quantitative methods in order to increase the usefulness of such work for policymaking. In my view, the relevance of such an appeal and the implied belief in procedural rationality is disputable, and perhaps even counter-productive, because it may undermine the very societal (and also scholarly) bearing of such research. Apart from the fact that history and culture are beyond planning and design, one of the main reasons that these “soft” factors

48 Having read dozens of research reports of quantitative bicycle research, I cannot escape the impression that many are full of truisms and that their conclusions are often trivial. See, e.g., Kevin J. Krizek and Rio W. Roland, “What Is at the End of the Road? Understanding Discontinuities of On-Street Bicycle Lanes in Urban Settings”, Transportation Research Part D: Transport and Environment 10, no. 1 (2005).
appear as residual categories and remain invisible in social-scientific bicycle research, is precisely that they cannot be probed on the basis of the prevailing quantitative methods. Since bicycle-researchers do not question their basic assumption that bicycling can be planned and designed, and do not put in perspective their narrow approach, they continue to disregard the cultural and historical dimension, and therefore also the tenacity and persistence of pedalling patterns.

As a first move towards bridging the gap between historical and policy-oriented bicycle studies, as well as a broader and also international-comparative perspective, I would suggest that, generally, three partly contrasting bicycle cultures can be distinguished in the western world on the basis of different volumes and purposes of bicycle use; different meanings, images and perceptions of pedalling; different patterns of engrained cycling behaviour (habitus49); different characteristics of cyclists and their motivations; and differences in the nature of cycling policies and activism. There is a marked contrast between the bicycle culture in the Netherlands and Denmark, which provides a prominent role for the two-wheeler in daily transport, and is historically rooted in its image of a “democratic horse” and “civilizing tool”, and the English-speaking countries and to a certain extent Germany, in which the bicycle has a marginalized or exclusive position, as either the poor man’s humble utensil or as an alternative and trendy vehicle. The third bicycle culture can be found in France, Italy and Belgium, where the popularity of cycling centred on sports and (professional) racing; the bicycle was (and is) especially glorified as a record-breaker, while pedalling for utilitarian purposes, with the exception of the Flemish part of Belgium since the 1970s, has declined to rather low levels.

These cycling cultures have taken shape in specific historical trajectories and in the context of modern nation states. In the following parts I will sketch these trajectories and contexts on the basis of existing studies50 with a focus

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49 The concept of ‘national habitus’ was coined by the historical sociologist Norbert Elias in order to refer to culturally and socially shaped patterns of behaviour that are self-evident on a national scale. See Kuipers, “The Rise and Decline”.

50 In the field of bicycle history (and, to a certain extent, also sociology), the focus has shifted from the technological development of bicycles to the social, cultural, and political dimensions of pedalling. For a historiographical overview, see Manuel Stoffers and Harry Oosterhuis, “Ons populairste vervoermiddel. De Nederlandse fietshistoriografie in internationaal perspectief”, Bijdragen en Mededelingen betreffende de Geschiedenis der Nederlanden/The Low Countries Historical Review 124, no. 3 (2009): 390–418; Manuel Stoffers, Harry Oosterhuis, and Peter Cox, “Bicycle History as Transport History: The Cultural Turn”, in Mobility in History: Themes in Transport: T2M Yearbook 2011, ed. Gijs Mom, Peter Norton, Georgina Clarsen, and Gordon Pirie (Neuchâtel: Alphil, 2010). For
on three phases in the bicycle’s history from its introduction in the late nineteenth century onwards resulting in growing diversity in cycling patterns between countries. First, when bicycles made their entry into society in the late nineteenth century, specific meanings and values were attached to pedalling, and particular wheeling practices were highlighted and promoted. Second, in the first half of the twentieth century the two-wheeler established itself as a means of transport for the masses and at the same time bicycle practices and experiences were increasingly affected by growing motorized traffic. Third, after the Second World War, the nationally diverse cycling patterns that had evolved in the previous period consolidated in restraining or enhancing vicious circles. The various relevant factors—cycling volumes and practices; meanings, perceptions and public images; attitudes and habits; land use, urban design and traffic infrastructures; government policies and bicycle lobbying and activism—mutually supported and strengthened each other in either an inhibiting or stimulating way and hardened in positive and negative spirals.

Modernity and Nationalism

The introduction of bicycles in late nineteenth-century society—the “velocipede mania” in the 1860s which was followed in the 1890s by a “bicycle boom” in many parts of the western world—was generally caught up in praise of modernity. The new vehicle was strongly associated with scientific and technological innovation, social progress and individual liberation, in particular among the liberal and urban middle-class citizens who had sufficient means and time to afford and ride it. The two-wheeled “freedom machine” enabled flexible mobility at an unprecedented speed, and it thus involved not only a new experience of time and space, but also self-autonomy and a widening of one’s mental horizon. Although the two-wheeler was introduced in postal

sociological contributions, see Horton, Rosen, and Cox, eds., Cycling and Society; Cox, Cycling Cultures.
services, police and fire departments, and the army before 1900, the first civilian cyclists did not so much use it for utilitarian rather than for sporting and leisure purposes. Riding the velocipede and the high-wheeler, which was risky and required agility, was largely restricted to athletic young men. For women and older men, pedalling became feasible only after the more practical and comfortable “safety bicycle” came onto the market. Their use of the new vehicle was above all recreational: touring in the countryside and enjoying nature, which provided townsfolk with a counterbalance to the supposedly harmful and unhealthy sides of industrial society. Cycling, an activity that combined physical exercise and mental respite, reflected and fostered a growing anxiety about individual as well as collective health. Riding on two wheels was a way to take part in modernity’s dynamism, while at the same time, by keeping balance and mastering the machine and experiencing inner tranquillity, to be in control of its disruptive restlessness.

In order to defend their interests against authorities who impeded their freedom of movement as well as against other users of roads such as coachmen and pedestrians, from the 1870s onwards, upper- and middle-class bicycle

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hobbyists organized themselves into local clubs as well as national associations. Such organizations, which were part of civil society, associated pedalling with particular social and political values. They lobbied for the improvement of traffic infrastructure and the civil right of riding on public roads, while at the same time they pressed wheelers to behave as civilized and self-disciplined traffic participants by learning the proper art of cycling. The individual freedom afforded by the new vehicle should be balanced by decency and responsible citizenship. The meaning which these organizations bestowed on bicycling reflected not only the values of bourgeois respectability and liberalism, but also nationalist ideals. Lobbying for more and better roads and other traffic facilities served the cause of connecting the nation. Their promotion of bicycle tourism as a way to discover native landscapes, the unspoiled, “traditional” countryside and national heritage, as well as to bridge the distance between town and countryside and between different regions radiated national pride.

Bicycle shows and parades also became part of nationalist celebrations. Since cycling clubs sought official recognition by government authorities, it was not unusual that their members paraded in uniforms and rode in formation—the similarity with horse-riding including military cavalry was obvious—in order to present themselves as patriotic citizens. Pointing out the bicycle’s military potential was also part of the scheme to win the approval of the authorities.

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To be sure, such patriotic manifestations were partly a rhetorical means to gain general approval. In some countries, however, pedalling was instilled with national values in a more fundamental and lasting way. In the early twentieth century, the Netherlands and Denmark came to be regarded by their own populations (as well as others) as cycling nations par excellence, while in France, Belgium and Italy cycle racing became a source of national pride. In the English-speaking countries, Germany and most other western nations, on the other hand, the two-wheeler was not linked to national distinctiveness, although Britain set the tone in the organization of cycle clubs and pedalling as amateur sports, and, together with France, was also leading in bicycle engineering and production, while the invention of the bicycle was claimed by Germans as well as Brits and French.56

8 Democratization and Status Decline

In the late nineteenth century, bicycles were expensive luxury items and therefore restricted to the upper and middle classes. In the first three decades of the twentieth century, ever more efficient mass production of safety bicycles entailed falling prices and their widespread adoption in daily traffic and for other utilitarian purposes.57 The two-wheeler enabled a longer distance be-

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between home and work, and thus contributed to suburbanization. Traders, shopkeepers and artisans used it to transport goods or offer their services. In the countryside, it advanced the opening up of isolated settlements: schooling and dating opportunities broadened, distant relatives and friends as well as new consumption options came within reach, and participation in social and club life on a regional and even national scale was facilitated. In some countries, the bicycle was employed to bridge long distances in sparsely populated and barren areas for economic purposes, for example in Sweden's northern forest regions and Australia's Western territories during the big gold rush.  

The interbellum period saw the onset of national differences in bicycle use and its public image, which have left their mark to this day. These variations evolved from (1) the diverging effects of growing motoring traffic; (2) the ensuing traffic policies implemented by governments; (3) the association of class and status distinctions with car-driving versus bicycle-riding, (4) the responses by bicycle organizations to these developments, and (5) their varying positions vis-à-vis professional cycle racing.

In several countries, the upsurge of utilitarian cycling among the lower middle and working class incited a social status decline of the two-wheeler. In Germany and Britain for example, where class and status distinctions were marked, the aristocracy and bourgeoisie more and more turned their back on the vehicle and exchanged it for the motorcycle and the car in order to distinguish themselves from the pedalling masses. Although the volume of cycle traffic was greater than ever between the First World War and the mid-1950s, the bicycle's aura as an icon of modernity was eclipsed by the automobile. The changing image of the two-wheeler from innovative to outmoded, was at odds with the growing practical use of the vehicle in the first half of the twentieth century.  

Even so, membership of middle-class cycling associations...
declined, while at the same time they barred or failed to draw the lower classes. German, British, and Italian workers established their own organizations, in which the bicycle was put into action for the socialist cause.60 As a consequence, the cycle lobby became hampered by organizational and ideological fragmentation. In this dynamic, the two-wheeler was more and more regarded as a “humble utensil”, as the typical lower class transport mode.61 In the United States, where the car became a mass product and an affordable means of transportation for the common man between the two world wars, the bicycle was socially marginalized even earlier and more rapidly than in European countries. Driving a car became part of the American dream and the two-wheeler was viewed as the vehicle for losers and eccentrics or for those with no status to lose such as youngsters and students. Already in the interwar period American wheeling levels were much lower than European ones.62

At the same time the influence of British, American and German pressure groups of cyclists, which in the preceding decades had lobbied successfully for improving the traffic infrastructure, dwindled when driving started to grow after the First World War. Not only did governments intensify their interference in traffic, experts gained more influence in policies at the expense


61 Fitzpatrick, Wheeling Matilda, 88.

of laymen such as cycle lobbyists. The modernist, forward-looking traffic and urban planning creed, in which upscaling and efficiency was central, prioritized the facilitation of motorized traffic and the construction of public transport networks. Policymakers, urban planners and traffic engineers viewed motoring in terms of progress and economic growth. Bicycle transportation was disparaged as out-dated, slow, inefficient and unsafe, as an impediment to a smooth and speedy circulation of traffic. In the English-speaking countries, and to a lesser extent also in Germany, this approach forced bicyclists, although still ever-present on public roads, on the defensive already before the Second World War. Lower-class cyclists who used their means of transport for utilitarian purposes and out of sheer necessity, did not have a voice in traffic policies. Policymakers and traffic experts largely excluded cycling from their (middle-class and future-oriented) frame of reference and thus made it invisible as a useful and convenient mode of transport. Moreover, because in general cyclists, unlike (middle-class) motorists, did not pay taxes for road use, their associations were no match for the much stronger car lobby, in particular


64 More in general, they were less outspoken about their cycling experiences than the late nineteenth-century upper and middle-class pioneers for whom the vehicle was novel and special, and they have left behind far less historical sources in which their voice can be heard. See, e.g., Männistö-Funk, “The Prime, Decline, and Recalling”; also Tiina Männistö-Funk, “The Crossroads of Technology and Tradition: Vernacular Bicycles in Rural Finland, 1880–1910”, Technology and Culture 52, no. 4 (2011).
if it was supported by the powerful automobile industries. If the economic crisis of the 1930s and the hardships during and after World War II impelled the massive utilization of the two-wheeler, from the 1950s on growing prosperity fostered car-ownership and driving as well as mobility on motorcycles, scooters and mopeds, while post-war traffic policies further cleared the way for the ascendancy of motoring on the roads. Functional differentiation of the built environment, urban sprawl and the upscaling of land use patterns entailed an increase of the number and distances of daily trips. Making room for moving and parked cars was the tenet of modernist urban design, which could be implemented in cities that had been destroyed in the Second World War.65

In several countries, such as Germany and to a lesser extent also Britain and the United States, bicycle paths were planned and sometimes built before the Second World War, but mostly only locally and not systematically. Moreover, they were generally poorly constructed, too narrow, incomplete, and not direct and continuous. Officially cycling tracks served the safety and convenience of cyclists, but the main purpose, backed up by governmental authorities, planners, police and motoring organizations, was to keep wheelers away from highways and serve the facilitation and speeding up of motorized traffic.66 In the Anglo-Saxon world, the construction of cycling infrastructure was half-hearted, ironically in part because bicycle rights advocates did not support it. They divined that separated facilities, even if they were incomplete, implied the suggestion that cyclists did not belong on regular roads and should be banned from them. British cycle associations insisted that wheelers should behave and be treated as drivers of a vehicle with the full right, like motorists, to move on public roads. This argument in favour of so-called vehicular cycling is still current in Britain and the United States. Although vehicular cycling was controversial among bicycle lobbyists and activists and many of them advocated segregated facilities, policymakers adopted it because this approach took the


least effort and was cheapest. As the volume and speed of motorized traffic on the roads kept increasing, however, vehicular cycling came with the unintended consequence of a growing preoccupation with the danger of cycling. This caused more and more people to abandon pedalling for commuting; only a minority of strongly motivated and experienced cyclists was not going to be put off by its real or alleged risks.

At the same time cycling suffered from a further loss of social status, now also among the working classes: only those without a driver's licence or who could not afford a car (the lowest income groups, youngsters, students and women) merely pedalled out of sheer necessity. On the basis of his own experience as a devoted wheeler in California during the 1940s and 1950s, the American engineer and bicycle activist John Forester relates that he faced a social stigma. He was impeded in his professional career and his wife felt embarrassed because the neighbours saw him commuting to work on his bicycle. Only certain groups, according to Forester, could use the bicycle in daily commuter traffic without losing standing. “The small community of cyclists that had always existed consisted largely of persons who could resist the social convention that despised cycling: those with no status to lose (working class, students) and those whose status was proof against derision (doctors, professors), and those who chose not to obey convention”.

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As a consequence of the marginalization of pedalling, up to now infrastruc-
tural cycling policies have received little support among tax-paying citizens.
Two American transportation experts, who refute pleas for more bicycle fa-
cilities and pushing back motoring, probably voice the views of a large seg-
ment of the American population when they argue that such policies do not
make sense in the United States because a substantial rise of pedalling levels
is unlikely to come about. They consider such policy as undesirable because
its benefits would not outweigh its costs, and it would violate the interests of
most Americans: “we strongly object to the use of disincentives to driving as an
inducement to bicycling. [...] It is bad policy to damage severely the welfare of
99 per cent (or even 98 per cent, assuming a consequent doubling of bicy-
cling’s current modal share) to benefit the 1 per cent (or, eventually, 2 per cent)
who bicycle”.70 This demonstrates that in countries with low cycling levels,
not only the United States, but also Britain, Canada and Australia, democratic
legitimacy is a thorny issue that troubles cycling policies: substantial returns
on investments depend on consistent long-term planning, whereas politicians
and their voters may expect relatively quick results. If substantial results fail
to occur in the short run, the political will and legitimacy to continue invest-
ing in bicycle infrastructure may be undermined. Against this background, the
analysis of costs and benefits has gained in importance in bicycle research, the
more so under neoliberal governance.71

9 The Dutchness and Danishness of Pedalling

The twentieth-century development of bicycling in the Netherlands and
Denmark differed significantly from that in other countries. Already around

70 Gordon and Richardson, “Bicycling”, 11.
71 P. Hopkinson and Mark Wardman, “Evaluating the Demand for New Cycle Facilities”,
Transport Policy 3, no. 4 (1996); Buis and Wittink, The Economic Significance; Glen
F. Koorey, “Why a Cycling Strategy on Its Own Will NOT Increase Cycling” (presentation,
New Zealand Cycling Conference, North Shore, 10–11 October 2003); Parkin and
(Copenhagen: Tema Nord, Nordic Council, 2005); Kevin J. Krizek et al., “Analysing
the Benefits and Costs of Bicycle Facilities via Online Guidelines”, Planning, Practice
& Research 22, no. 2 (2007); Krizek, “Cycling”; Börjesson and Eliasson, “The Benefits of
Cycling”; Horton and Parkin, “Conclusion”; Nick Cavill et al., “Economic Analyses of
Transport Infrastructure and Policies Including Health Effects Related to Cycling and
Walking: A Systematic Review”, Transport Policy 15, no. 5 (2008); Kjartan Saelensminde,
“Cost-Benefit Analyses of Walking and Cycling Track Networks Taking into Account
Insecurity, Health Effects and External Costs of Motorized Traffic”, Transportation
Research Part A: Policy and Practice 38, no. 8 (2004); Aldred, “Governing Transport”.
the First World War, the Netherlands was seen as a cycling country par excellence by Dutch and foreigners alike, and in Denmark the bicycle became a national token from the 1920s on. The two-wheeler’s establishment as a widely shared means of transportation and its lasting popularity in both countries was not so much, or at least not only, related to favourable material conditions (minor or no differences in elevation, relatively short distances, high levels of urbanization and compact historical towns) and the cycling volume in itself, which hardly differed from their neighbouring countries until the 1950s. What set the Netherlands and Denmark apart from the rest of the Western world, was rather the socio-political meaning attached to pedalling and its public image.\textsuperscript{72}

The large and influential National Dutch Wheelers’ Association, founded in 1883, steadily promoted the bicycle as a widely accessible and convenient means of transportation. In public expressions and events, the liberal and national-minded bourgeois citizens who directed the association promoted wheeling in terms of supposedly longstanding Dutch qualities and certain civil virtues, such as independence, self-control, soberness, modesty and stability. The Dutchness of pedalling was underlined by comparing it with ice-skating. On the other hand, the bourgeois cycling-vanguard mostly considered (commercial) cycle racing as vulgar and indecent, as contrary to the image of wheelers as respectable and responsible road users. This view made itself felt in government policies: road cycling races became rare as a consequence of prohibitions in a traffic law adopted in 1905. Touring, on the other hand, and also practical cycling were actively promoted. When the bicycle came within reach of the popular masses, the Dutch Wheeler’s Association advocated it as an egalitarian means of transportation—“the democratic horse” as the editor of the organization’s periodical phrased it—that would bring progress for all


EBSCOhost - printed on 12/22/2021 6:33 AM via MAASTRICHT UNIVERSITY. All use subject to https://www.ebsco.com/terms-of-use
ranks. Its diffusion among the working classes was viewed as a way to integrate them into the nation.

The technical design of the two-wheeler that became standard in the Netherlands, reflected the idea of the vehicle as a practical and civilizing tool. The solid and sturdy Dutch wheeler (*Hollandrad* as Germans still refer to it), was not meant to break speed records, to work oneself, dressed in sports outfits and leaning forward, into a sweat, or to incite sensual or aesthetic feelings, but to ride neatly upright, in regular and decent clothes and in an unhurried pace. Equipped with luggage carrier, chain guard, dress-guards and lighting, and usually painted in black, it was tailored to everyday use as well as civil standards of propriety. With pictures of cyclists against the backgrounds of typical Dutch landscapes, historical towns, windmills, the Dutch flag and folk in traditional costumes, the marketing of the Dutch bicycle industry stressed the embeddedness of wheeling in national culture. The Dutch image of the two-wheeler differed from its aura in other countries—in France, Belgium and Italy in particular—where bicycle models were often geared to sports and racing. Associations with lightness and flying as well as with fashion and eroticism—if cycling women were depicted—were also prominent in advertising the vehicle, but such attributes were in general lacking in the Netherlands.

Developments in Denmark largely were similar to Dutch patterns. The Danish Bicycle Club and Cycling Federation, founded in 1881 and 1905 respectively, dissociated themselves from cycle racing and promoted the construction of bicycle ways and touring, which was marked as a national pastime. Unlike the German, British and American bicycle organizations, which were divided along class-lines and over different bicycle activities (sports versus utilitarian use and touring, as well as the English ideal of gentleman-amateur sports versus professional and commercial racing), the Dutch and Danish associations spoke with one voice and could claim to represent the common interests of all cyclists in the country. Contrary to German and British workers, the Dutch and Danish labour movements did not develop a distinct socialist vision on bicycling and the attitudes among their constituencies were largely in line with

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73 Ebert. “Het ‘paard der democratie’”, 236; on the topic of cycling women, see also Anne-Katrin Ebert, “Liberating Technologies? Of Bicycles, Balance and the ‘New Woman’ in the 1890s”, *ICON: Journal of the International Committee for the History of Technology* 16 (2010).

the national and civil values (practicality, modesty, simplicity, soberness, level-headedness, and diligence) which the middle-class cycling lobby disseminated. In both countries the definition of the two-wheeler as a practical transport mode for all citizens and as a civilizing and assimilating utensil prevailed. In this way it was moulded into a vehicle of national identity, while at the same time cycle racing did not incite national pride, as happened in France, Italy and Belgium. The bicycle's enduring omnipresence and popularity and the riding style in the Netherlands and Denmark—characterized by a Dutch sociologist as “distinction through simplicity”—was and is related to the fairly egalitarian social ethos and distaste for showing off and status distinctions.\(^{75}\)

This is underlined by the fact that (in particular female) members of the Dutch royal family and cabinet ministers regularly appeared (and still appear) in public on a bicycle. In Denmark, images of pedalling women played an important role in linking the bicycle with liberal attitudes, emancipation and equality, which have been presented as national virtues. In particular during the First and Second World Wars, cycling was connected to qualities that supposedly contrasted the Dutch and Danish nations with everything that characterized the militaristic belligerent nations, and especially German authoritarianism and hyper-masculinity.

In the Netherlands and Denmark, the growth of motoring—which in both countries was slower than in other parts of the Western world, partly because there was no large automobile industry and cars were more heavily taxed than in car-producing countries—led to a decrease in bicycle use, but to a much lesser extent than elsewhere and neither did it entail a social devaluation of the vehicle.\(^{76}\) Again, the approach of the Dutch and Danish cycling associations and government policies played a major part. Whereas in other countries bicycle traffic and motoring were increasingly considered as mutually exclusive and conflicting, in the Netherlands and Denmark their complementary nature and shared needs (good roads, signposting, traffic safety, and largely separated facilities) were underlined—which reflected that most drivers were also accustomed to pedalling. Therefore the Dutch and Danish cycling organizations, which promoted bicycle ways, succeeded in influencing government policies more effectively than the marginalized bicycle interest groups elsewhere. From the early twentieth century onwards, bicycle ways were constructed in these countries, at first mostly for leisure touring, but increasingly also for utilitarian purposes, and over the decades the bicycle infrastructure

\(^{75}\) Kuipers, “The Rise and Decline”, 24.

\(^{76}\) Vincent van der Vinne, *De trage verbreiding van de auto in Nederland 1896–1939* (Amsterdam 2007); Koglin, *Vélocimobility*. 
steadily expanded. While the Dutch Wheelers’ Association played an initiating role, the government used the revenues of the—generally resented—bicycle tax levied between 1924 and 1941, for funding cycling facilities. The growing contrast between, on the one hand, the Netherlands and Denmark and, on the other, the English-speaking world and, to a lesser extent, Germany, can be partly explained on the basis of the long-term effects of the infrastructural facilities put in decades earlier, which in their turn had been advanced by the previously established image of the bicycle as a widely shared means of transportation as well as a vehicle for national distinctiveness.77

While, from the 1950s onwards, daily bicycle-use strongly diminished in most western countries, it remained relatively high in the Netherlands and Denmark. Whereas in the late 1930s the level of bicycle traffic was even higher in Denmark, in the late 1940s and the 1950s the Netherlands developed and maintained the highest bicycle density in the world.78 Although the Dutch and Danish governments did not promote cycling actively until the 1970s and motoring swelled rapidly from around 1960, bicycle traffic was not hampered to the same extent as elsewhere and it continued to be more visible. The leftist, “green” bicycle activism that arose in the 1970s, affirmed the self-evident view of pedalling as a sensible means of mobility. The more radical lobbyists, just like the established ones earlier on, became involved in policy-making by local and national governments.

10 Contrasting National Cycling Cultures

The twentieth-century trends in, on the one hand, the Netherlands and Denmark and, on the other, the English-speaking world and, partly, also Germany, have resulted in contrasting bicycle cultures. In the first two countries the benefits of cycling are self-evident: it is largely part of people’s natural daily routine from an early age. The bicycle is used first of all for practical purposes; its role in leisure and sports, although also significant, is secondary. The demographic characteristics of wheelers largely represent those of the

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population as a whole and cycling is hardly associated with a particular alternative lifestyle or political viewpoint. Government and bicycle interest groups cooperate and cycling policies are hardly disputed. Apart from non-European immigrants, the Dutch and the Danes hardly need to be convinced of the usefulness and benefits of bicycle transport. The emphasis is on the improvement of the general infrastructural preconditions, and facilitation of the already high levels of bicycle traffic, especially for the benefit of the flow of all traffic. Since many Dutch and Danes both drive and pedal, cyclists and motorists are not pitted against each other to the same extent as in car-dominated countries. Wheelers enjoy a high level of security in traffic and bicycle-riding is not regarded as particularly dangerous.79

In the United States, Britain, Canada and Australia, where the bicycle was pushed out by the car to a much greater extent than in most European countries, and cycling policies, if they exist at all, are contested and do not elicit broad support, the two-wheeler is rather used for leisure and exercise than in daily commuting. For many people pedalling is a typical childhood and youth experience at best and bicycles are often regarded as toys rather than useful vehicles. Younger men are strongly overrepresented among wheelers, while women and the elderly are underrepresented. In the public perception of utilitarian cycling, negative valuations as abnormal, eccentric, inferior, unsafe, uncomfortable and (too) strenuous abound. Also, pedalling is associated with either poverty and low social status (although nowadays well-educated people are overrepresented) or, on the other hand, an exclusive “lycra-and-helmet, sporty-and-skilled” and fashionable yuppie practice, whereas some wheelers, in particular bicycle couriers, are labelled as “kamikaze riders”.80 Many mo-

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torists view wheelers as a nuisance and as incompetent and dangerous road users. Reporting on his experience as a commuter cyclist in Birmingham (Britain), geographer Phil Jones points out how he “was being loaded with a whole series of labels: ‘fit’, ‘healthy’, ‘eco-friendly’, ‘sustainable’ (and also ‘mad’, ‘crazy’, ‘reckless’). No longer myself, I was constructed as a ‘cyclist’.” Both in the public perception and in their self-image Anglo-Saxon wheelers are “a breed apart” and this impedes the “normalization” of cycling. Many British and American bicyclists, women even more than men, seem to struggle with the image of being either a “hard-core” cyclist and “too much’ of a cyclist” or a “bad” (that is unskilled and irresponsible) cyclist.

In the English-speaking world, and also in Germany, the minority of regular and determined cyclists not only share a strong sensitivity for the partly bicycle-hostile and unsafe traffic conditions, but also pronounced motives and great appreciation of, and identification with, their vehicle. In general, in


these countries a much more explicit reflection on the significance and experience of pedalling is present than in the Netherlands and Denmark, where it is an entrenched routine without there being a need for political-ideological arguments about its benefits. In Britain and America, the striving for being treated as equal traffic participants and for wheelers’ safety is (and apparently still needs to be) articulated in political terms such as the civil right of having free access to mobility regardless of the means of transportation. In the United States in particular, a militant and politicized cycling movement and subculture have developed, in which the glorification of two-wheelers is intrinsically linked to fundamental criticism of the dominance of motoring and the interrelated urban planning, economic prerequisites and lifestyle. In a similar vein, many German wheelers seem to distinguish themselves from the majority of the population by their conscious lifestyle, “green” political affiliation and critical attitude towards the dominant car-oriented traffic culture and policies. Until the 1970s, the use-pattern and popular image of the two-wheeler in Germany resembled those in the English-speaking world. Since the 1970s, however, German pedalling levels have risen considerably above those of Britain, the United States, Canada and Australia, and over the last three


Paradoxically, this may also explain why there has been more (popular as well as academic) interest in cycle history in Great Britain, the United States, Canada, Germany, and France than in the Netherlands and Denmark. In the last two countries, pedalling seems to be so obvious and so uncontested that it does not give cause to substantial reflection or foster a deeply felt need to pursue its history. See Harry Oosterhuis and Manuel Stoffers, “A Strong Presence, but a Weak History: The Bicycle in Dutch Historiography”, Cycle History 21, ed. Ritchie; Manuel Stoffers, “Cycling as Heritage: Representing the History of Cycling in the Netherlands”, Journal of Transport History 33, no. 1 (2012).

decades in several parts of the country the cycling culture has shifted into the direction of the Dutch and Danish one. At the same time, however, the car, supported by an all-powerful industrial and automobile lobby, has preserved its absolute priority in traffic policies, while the bicycle infrastructure and its upkeep, which are geared to touring rather than daily commuting, lags far behind that in Denmark and the Netherlands.

Apart from being fragmentary, inconsistent and controversial, British, American, Australian, and, to a lesser extent, German bicycle policies do not elicit broad public interest or support. In particular, with respect to discussions about the (lack of) safety of bicycle riding, policymakers as well as cycling activists have different views on the need for separate bicycle facilities. Some of them oppose the segregation of bicycle and motorized traffic and argue that cyclists should be enabled to share the regular roads with other vehicles and that they as well as motorists should adapt their traffic behaviour and driving skills to this situation. Furthermore, the highlighting of safety issues, including the promotion of bicycle helmets, has had an adverse effect: the image of the bicycle as a risky vehicle and cyclists as extremely vulnerable road users has again and again been confirmed and even strengthened. In countries with low cycling levels, it is difficult to change this image of the bicycle—and the reality underpinning it. Bicycle studies strongly suggest that there is a statistical correlation—called safety in numbers—between the (lack of) safety of pedalling and the volume of cycling traffic. The statistical risk of an accident is relatively smaller or larger as more or less cyclists use the roads. As long as cycling levels are low and motorized transportation is dominant, the


risk of an accident seems large and pedalling is (perceived as) dangerous. And as long as cyclists are depicted as potential victims, most people will shy away from heavy traffic and only a few will use the bicycle in daily traffic or let their children pedal. Cycling among children and young people has considerably declined in recent decades, resulting in fewer people who in fact get used to ride a bicycle in traffic and more people who do not develop any bicycle skills at all. Lack of cycle experience and the self-perpetuating association of biking with danger discourage people later in life from using a bicycle as a means of transport. Not only real risks, but also the related image of pedalling as dangerous, strengthen the sense of insecurity and hamper bicycle promotion policies in the English-speaking world.90

Apart from the marked contrast between on the one hand the Netherlands and Denmark and, on the other, the English-speaking countries, and, to a large extent, Germany, a third national bicycle culture can be distinguished, that of France, Italy, Belgium, and, to a lesser extent, Spain.91 The nationalist


dimension of cycling in these countries did not concern, as in the Netherlands and Denmark, daily commuting, which since the 1960s fell to similar low levels as in many other parts of the western world, but was connected to sports and (professional) racing. Around 1900 there was considerable social resistance against competitive professional racing in the Netherlands, Denmark, Britain and Germany because most bicycle organizations in these countries not only followed the English sports ideal of the gentleman-amateur, but also prioritized touring and, later on, utilitarian bicycling as well. Leading French, Belgian (Flemish as well as Walloon), Italian and Spanish cycling associations, on the other hand, embraced and promoted bicycle racing, which entailed the commercial involvement of the (sports) media and the bicycle industry. Together with bourgeois lobbyists, bicycle manufacturers and newspapers organized and sponsored races in order to attract customers and subscribers. In the many local, national and international seasonal races, which replaced or were embedded in more traditional community entertainment and which attracted mass audiences, the achievements and sporting virtues of native racing heroes were celebrated, widely publicized and associated with the nation's vitality. Annual highlights such as the long-distance and staged road races Tour de France (from 1903 onwards), Ronde van België (Tour of Belgium, from 1906 onwards) and Ronde van Vlaanderen (Flanders, from 1913 on), Giro d'Italia (from 1909 onwards), and the Spanish Vuelta Ciclista (from 1935 on) became national events and grew into cherished traditions. Since the racers crossed the entire country, the extensive media reports covered its geographic contours, spurring the spectators along the roads and the reading audience to identify with the nation. In Belgium, bicycle racing was also instrumental in the emancipation struggle of the (lower-class) Flemish population against the dominant Francophone upper classes.

Most of the professional racers originated from the working class; for them a cycling-career offered an attractive opportunity to reap local, national or even international fame, make money and climb the social ladder. Although socialists and communists criticized the commercialization of professional pedalling and accused the bourgeois organizers of exploiting working-class racers for capitalist purposes, the sport enjoyed broad popularity among the lower as well as the middle classes. With the exception of the Flemish bicycle culture...
and volumes, which have tended to shift towards Dutch and Danish patterns, the racing nations show rather low utilitarian pedalling levels while their infrastructural cycling facilities and policies (with local exceptions, such as many Northern Italian towns) are lagging behind those of North-Western and Central European countries. The overrepresentation of men among cyclists and the strong presence of racing bicycles in these countries signal a continuing strong association of cycling with sports, although the popularity of touring is growing and rent-bicycles have been introduced in several tourist cities.92

11 Conclusion: The Relevance of History for Bicycle Policies

Natural, spatial and demographic factors cannot adequately explain the large international differences in cycling levels. Also, the often-assumed causal link between infrastructural design and promotional activities on the one hand and pedalling volumes on the other has not been confirmed empirically. Bicycle studies do not provide conclusive evidence that “hard” infrastructural policies bring about an increase in cycling. An inverse relation cannot be ruled out: the building of facilities and their use may be the consequence of a preceding surge in cycling, caused by other factors and advancing the demand for cycle provisions. In that case infrastructures principally serve the needs of already accustomed wheelers—an effect which is in itself not without merit, although much less spectacular and visible than facilities causing an upsurge of cycling. In a similar vein, “soft” policies, such as education, promotion and marketing, primarily affect people who already pedal and believe in its benefits, whereas those who never or seldom mount a bicycle, are barely reached, let alone convinced, so that among them changes in perception and behaviour are not realized. Policies during the last two decades have largely failed to generate significant increases in utilitarian cycling in countries with low to average pedalling levels, whereas in countries with relatively high cycling volumes,

such policies have contributed to a consolidation of its existing, relatively high level, rather than to further growth.

The widely diverging national cycling volumes and their large degree of permanence are rooted in diverse long-term national trajectories which have shaped built environments and traffic infrastructures as well as the collective meanings attributed to cycling and interrelated attitudes, perceptions, experiences and habits. These factors are largely immune to direct and short-term planning and, in particular, to policies which are based on the assumption that travel behaviour is motivated by rational decision-making. Taken together, the factors that are relevant for cycling levels appear to be trapped in either an inhibiting or stimulating vicious circle, in dynamics from which it is difficult to break out. In countries where land use patterns, urban planning and traffic infrastructure are not conductive to cycling, and the two-wheeler is not broadly regarded as an obvious means of transport, few people use it. As long as cycling continues to be a fringe mode of an exceptionally motivated and skilled minority, motoring will dominate traffic, the idea will prevail that pedalling is deviant, inferior, uncomfortable and dangerous, and there will be a lack of sufficient social pressure, democratic support and willingness among policy-makers for changing the traffic infrastructure and the image of the bicycle. Although governments in the English-speaking world have made efforts to promote bicycling, overall, apart from some modest results on the local level, the outcomes have been disappointing because such efforts are not structurally embedded in policies and lack continuity. In Denmark and the Netherlands, and perhaps increasingly in some other countries, such as Germany and Flanders, on the other hand, the enduring high or increased bicycle volumes and the familiarity of the majority (or a substantial part) of the population with bicycle-riding guarantee broad or adequate support for bicycle policies. The steady and structural development and upkeep of cycling facilities warrants that pedalling remains attractive and a matter of course. In these countries, bicycle policies have contributed less to a significant growth of bicycling than to a consolidation of its existing level.

Policymakers and social-scientific bicycle researchers have largely disregarded the persistent influence of history and (national) culture on current cycling levels and patterns. Both determining factors, which are largely invisible in policy-oriented bicycle research, put limits on what policies can realize in the short run. As a corrective to the over-optimistic belief in rational planning and in order to develop more realistic and effective policies, it may be advisable for policymakers and bicycle researchers to consider the historical and national specific interrelations between natural and built environments, traffic infrastructures, meanings and perceptions, and habits and attitudes with
regard to cycling. Adopting historical knowledge and an international comparative angle may temper unrealistic expectations among bicycle researchers and policymakers, and help them to attune policies to what is feasible and what is not within existing bicycle cultures. Also, it may be wise to shift the focus in bicycle policies from rational planning to nudging strategies in order to influence through more subtle, socio-psychological and cultural means the engrained habits and attitudes that play such a crucial, but not always clearly visible motivational role in traffic behaviour and mobility patterns. Finally, efforts to promote bicycling can only be successful in an enduring way if politicians and other policymakers have the courage to defy powerful car lobbies and to introduce structural measures that discourage and curb motoring.