

urban growth, the private car and inactivity



There are many reasons why we need to discourage ourselves from using the private car. The narrative sold in advertising from the automobile industry is that the car can take us conveniently, quickly and comfortably from any origin to any destination. The car supposedly gives us freedom and even status. But the reality, when many people choose this option, is that we sit in a traffic queue, and often the drive can be the worst part of our day.

The advertising spend on motor vehicles is incredible: the automobile industry spent \$44 billion on advertising in 2016; the major brands, including Chrysler, Daimler, Ford, General Motors, Honda, Nissan, Toyota and Volkswagen, each spend more than \$2 billion on advertising per annum.¹ This, of course, is to sell vehicles, and the pitch is to make the purchase of the car seem irresistible. It is hugely successful; hence the continuing spend.

However, more and more people are realising that the motor car dream, as conceived and sold, is seldom achieved – and that there are many adverse impacts that are not widely discussed. These include energy depletion, carbon dioxide emissions, traffic casualties, poor local air quality, obesity and the health impacts of inactivity, and loss of street space to the car.² Surely reducing these impacts is much more important than allowing advertising to shape beliefs in the pursuit of profit?

Many cities are leading with investments in high-quality public transport, cycling, walking and the public realm. We all know of the cities that are progressive in implementing innovative, sustainable mobility systems: Amsterdam, Barcelona, Berlin, Bogotá, Copenhagen, Delft, Freiburg, London, Madrid, Montpellier, Paris, Strasbourg, and many others. Yet there are problems in even these cities: road space reallocation and traffic demand management are often not radical enough, particularly in the suburban areas, where car usage remains dominant. In the other urban areas,

globally, there are either very high levels of car usage or rapidly increasing car ownership and almost ubiquitous aspirations to own cars among the public.

This is hugely problematic if we consider the global urban growth projections over the next few decades. We are experiencing the greatest global urban expansion in history and, consequentially, an unprecedented demand for increased levels of mobility. Unless we do something remarkable in transport and city planning over the next decades, most of the projected urban growth is likely to be based around use of the private car. We have a problem – and it looks like Houston.

Let's look first at the urban growth projections. The global population of 7.3 billion in 2015 is expected to reach 8.5 billion by 2030, 9.7 billion in 2050 and 11.2 billion in 2100.³ Since 2007, over 50% of the global population has lived in urban areas, reflecting a huge shift from rural to urban societies. In 2014, the urban population has risen to 54% of the global total, compared with just 13% in 1900. Today, there are nearly 1,000 urban areas with populations of over 500,000, three-quarters of which are in the Global South.⁴

The story, then, is that more urban areas will be built in the next few decades than in all of previous human history, and most of the emerging cities will be in the Global South – in Asia, South America and Africa.⁵ In 1800, when the global population was around 1 billion, only 3% of the population lived in urban areas, and only one city (Beijing) had a population greater than 1 million. In more recent years, the number of large urban areas, including mega-cities with populations over 10 million, has rapidly increased (see Fig. 1):

- In 1990, there were ten mega-cities, home to 153 million people, accounting for less than 7% of the global urban population; with 21 large cities and 239 medium-sized cities.

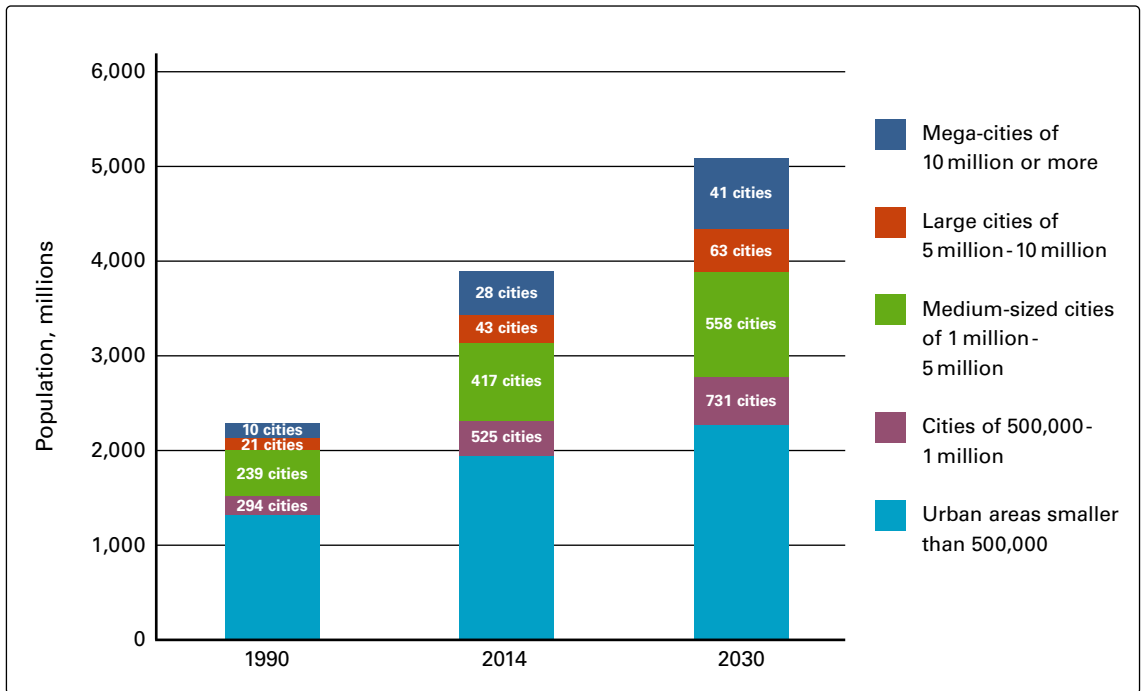


Fig. 1 Global population growth in urban areas

Source: *World Urbanization Prospects: The 2014 Revision* (United Nations)⁵

- In 2014, there were 28 mega-cities, with 453 million residents, and 12% of the global population; with 43 large cities and 417 medium-sized cities.
- It is expected that in 2030 there will be 41 mega-cities; with 63 large cities and 558 medium-sized cities. Beyond this, the fastest-growing urban areas are medium-sized cities (1 million-5 million inhabitants) and small cities (500,000-1 million inhabitants) – accounting for 26 of the 43 fastest-growing urban areas.

The problem that follows is that there is likely to be a large increase in travel associated with this urban growth. There are many potential adverse impacts depending on the urban form, kilometres travelled and modes taken. Consider some of the important current adverse impacts:

- **Carbon dioxide emissions:** Although some countries are reducing national carbon dioxide emissions to a limited degree, the large emitters are dramatically increasing emissions – for example, China emitted 10.5 gigatonnes of carbon dioxide in 2014, a growth of over 300% on 1990 levels. The transport sector is the key sector that is failing to contribute to reduced carbon dioxide emissions in almost all contexts – even the

progressive cities are only reducing their transport carbon dioxide emissions marginally.

- **Traffic casualties:** Around 1.25 million people die each year resulting from road traffic crashes and road traffic injuries – this approximates to 3,400 deaths per day. In addition, between 20 million-50 million more people suffer non-fatal injuries, with many incurring ongoing disabilities. This is a cost that has been ‘normalised’ in society – we hardly give it a second thought – but, surely, this is much too heavy a cost for a means of moving around between activities.
- **Non-communicable diseases:** Non-communicable diseases (NCDs) killed around 38 million people in 2012, representing 68% of 56 million global deaths. These include cardiovascular diseases (mainly heart disease and stroke), cancers, respiratory diseases and diabetes. Many of the risk factors for NCDs are closely related to diet and physical exercise and, in part, the level of active transport we take.

Let’s look in more detail at this latter major adverse impact resulting from our current travel behaviours – the obesity and health impacts of inactivity. The levels of NCDs, by themselves, should mean we seek to change our transport

systems and means of travel. A profound shift has occurred in the balance of the major causes of death and disease with the rise of NCDs. Also known as chronic diseases, NCDs are not passed from one person to another, but develop within each individual. There are strong correlations with travel mode shares and the built environment, with high levels of car usage being associated with inactive and unhealthy individuals. The four main types of NCDs and numbers of deaths, annually, are:⁶

- cardiovascular diseases (mainly heart disease and stroke) – 17.5 million deaths;
- cancers (including endometrial, breast, ovarian, prostate, liver, gallbladder, kidney and colon) – 8.2 million deaths;
- respiratory diseases – 4 million deaths; and
- diabetes – 1.5 million deaths.

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Almost three-quarters of NCD deaths (28 million) occur in low- and middle-income countries, and 16 million NCD deaths occur before the age of 70 – known as ‘premature deaths’. Although NCDs are not directly caused by use of the private car, this form of inactive travel, alongside poor urban planning and dispersed built environments, and a lack of infrastructure for walking and cycling, contribute by making it difficult to choose active means of travel.⁷ The most important risks leading to NCDs are high blood pressure, inadequate intake of fruit and vegetables, being overweight or obese (also linked to type 2 diabetes), physical inactivity, and tobacco use. Hence most of the risk factors are

closely related to diet and physical activity. More use of active transport can help with all of them.

The body mass index (BMI) is used to measure levels of obesity. Adult obesity is defined as a BMI greater than 30 kilograms per square metre (kg/m^2), with moderate obesity at a BMI of 30-35 kg/m^2 and morbid obesity at a BMI of 40-50 kg/m^2 . An adult is viewed as overweight with a BMI of 25-30 kg/m^2 and underweight with a BMI of less than 18.5 kg/m^2 . Hence, most adults should have a BMI of 18.5-25 kg/m^2 . Use of the BMI has some limitations (for example, it doesn’t distinguish between excess fat, muscle or bone; or age, gender or ethnicity), but it is a useful initial measurement of levels of obesity.

Obesity is a risk factor for NCDs and also contributes to musculoskeletal disorders, especially osteoarthritis, a highly disabling degenerative disease of the joints.⁶ Globally, the obesity rate has more than doubled since 1980 and now represents a very significant health problem. In 2014, more than 1.9 billion adults (18 years and older) were overweight (i.e. 39% of adults); of these, over 600 million (13%) were obese. There is increased consumption of energy-dense, nutrient-poor foods which are high in fat, sugar and salt; reduced levels of physical activity at home, at school, at work and for recreation and travel; and the use of tobacco – and all of these factors contribute to the NCD problem.

Physical activity can help with weight control, reduces the risk of NCDs, and has substantial benefits for many conditions, not only those associated with obesity. For example, physical activity reduces blood pressure, improves the level of high-density lipoprotein cholesterol, improves the control of blood glucose in overweight people (even without significant weight loss), and reduces the risk of colon cancer and breast cancer among women.⁸ The World Health Organization recommends that individuals engage in adequate levels of exercise throughout their lives – at least 30 minutes of regular, moderate-intensity physical activity are required on most days.

The prevalence of adult obesity (a BMI greater than 30 kg/m^2) varies significantly by country. Japan has a very low prevalence of obesity, at 3.5%, as has Korea, at 4.1%; most European countries are at slightly higher levels, with Italy at 10.1%, the Netherlands at 11.4%, and Germany at 14.7%. Some countries have very high levels – such as Australia at 24.6%, England at 24.8%, Mexico at 30%, and the United States at 35.9%.⁹ The data is broadly comparable, although some countries publish obesity prevalence based on measured height and weight, whereas other countries use

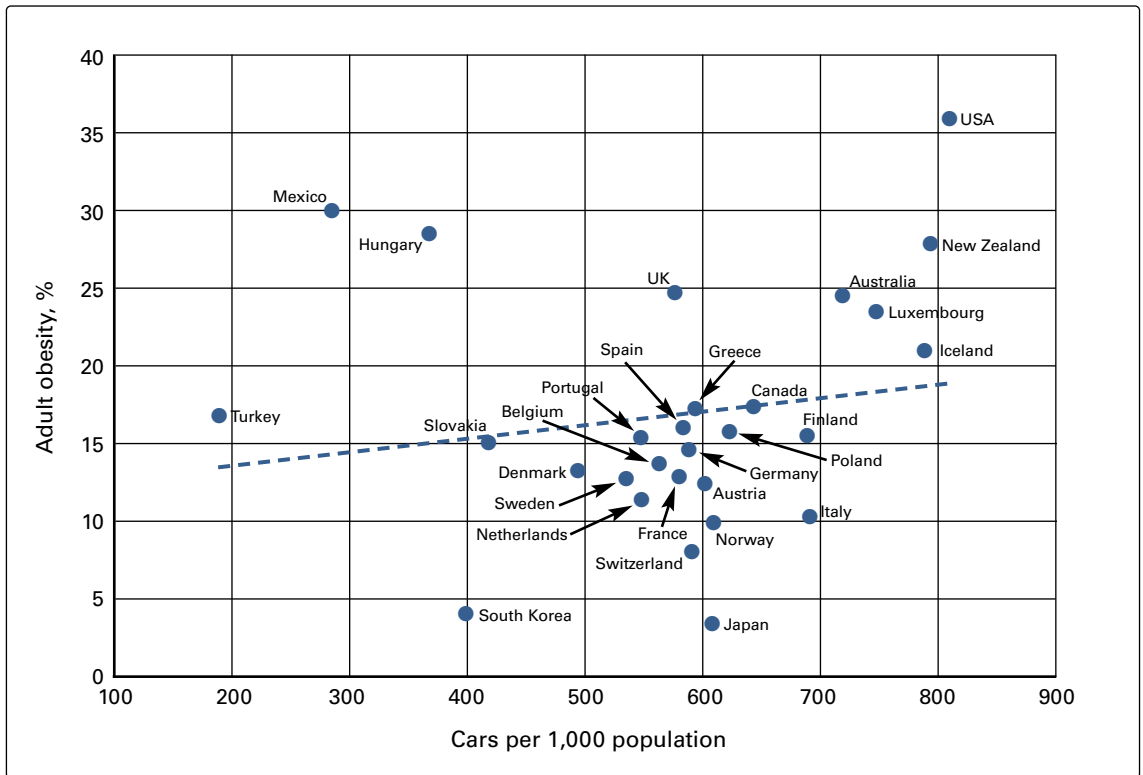


Fig. 2 Adult obesity and the motorisation rate, 2014

Data sources: *Adult Obesity Prevalence* (Public Health England)⁹ and *World Motor Vehicle Production* (International Organization of Motor Vehicle Manufacturers)¹⁰

self-reported data. However, it is likely that obesity prevalence estimates based on self-reported measures are lower than those based on actual measurements, and thus many of the figures may be worse than cited here.

Moderate obesity (a BMI of 30-35 kg/m²) is found to reduce life expectancy by an average of three years, while morbid obesity (a BMI of 40-50 kg/m²) reduces life expectancy by eight to ten years. These are very significant figures – and again they seem to be normalised in society. Around 8% of annual deaths in Europe (around one in 13) are attributed to levels of obesity.⁹

The correlation of obesity with motorisation is shown in Fig. 2. Highly motorised countries usually have the highest obesity ratios – such as the USA, New Zealand, Australia, and the UK. There are, however, some outliers – such as Mexico, with a lower motorisation rate and high obesity; or Japan, with a high motorisation rate but low obesity. Hence obesity is only partly related to travel inactivity and other contributory factors are also important.⁹ But, for sure, travelling around in a car is

not providing the individual, or our children, with any exercise.

So very significant adverse impacts are associated with our use of the car. If we look at these trends in a positive manner – as a reason to facilitate change in our urban and transport planning – then there are great opportunities to actively design future cities for human habitat. We can use the scale of future urban growth to develop cities that support environmentally and socially sustainable travel behaviours. We can also retrofit our existing cities and urban areas. There is a window of opportunity – but it requires compact urban development and massive investment in public transport, walking and cycling networks across multiple cities.

We can no longer hide behind pragmatism and say we should not be ‘anti-car’, that this type of argument is simply ‘car bashing’, that our lifestyles are too complex and can only be facilitated by the car, and that people wish to use the car. This is simply leading to more use of cars.

Some cities show high levels of public transport, walking and cycling, such as Berlin, at 70% non-car

mode share by trips, and London, at 60%. These levels of non-car mode shares have to be the targets for cities internationally. Each city's future sustainable mobility strategy will vary, reflecting different problems and opportunities, and different levels of public awareness and debate. There will be different public transport systems and different shares of bus, bus rapid transit, light rapid transit, subway, rail, cycling and walking, according to context. But all cities can work towards two headline targets by 2025:

- At least 70%-80% of trips should be by public transport, walking and cycling.
- The remainder of trips should be by low-emission vehicles. There is no need for petrol or diesel vehicles, nor private car ownership – any requirements for use of the private car can be delivered via car clubs or car hire.

This is not too large a cost on our convenience relative to the benefits that will follow. As long as we live in urban areas, then most of our activities can be reached by public transport, walking and cycling – and our levels of car usage can be very low. We may even still use a car for a small number of trips, but this should only be for 20% of trips at most. Public space can be reallocated to support better public transport, walking and cycling networks – we are seeing some examples of this, but we can be much more radical here. We should no longer destroy our cities and lives to accommodate the private car – and to make money for the motor manufacturers.

This is a great goal for our transport and city planners – what an important job to have – but we must argue hard, consistently and radically for a changed approach. We need to look beyond the advertising dream and design a different future for our cities. There are many vested interests and much inertia to overcome – but the potential rewards for society are huge.

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Notes

- 1 K Maddox: 'Global ad spending will be up an average 4.2% next year'. *AdAge*, 11 Jun. 2015. <https://adage.com/article/btob/global-ad-spending-average-4-2-year/298980/>

- 2 R Hickman, D Smith, D Moser, C Schaufler and G Vecia: *Why the Automobile Has No Future: A Global Impact Analysis*. Greenpeace Germany, Sept. 2017. www.greenpeace.de/presse/publikationen/why-automobile-has-no-future
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- 4 Chapter 12: 'Human settlements, infrastructure and spatial planning'. In *AR5 Climate Change 2014: Mitigation of Climate Change*. Working Group III contribution to the Fifth Assessment Report. Intergovernmental Panel on Climate Change. Cambridge University Press, 2014. www.ipcc.ch/report/ar5/wg3/
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