Activating the City
Realising the Untapped Transport Potential of Walking and Cycling
ACKNOWLEDGEMENTS

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Introduction

In the twentieth century, planning for the city was about planning for the car.

In recent years, however, the full cost of this focus has become increasingly clear. Pollution, congestion, and climate change—each is driven in large part by an overreliance on the private automobile as the primary mode of transport in industrial and postindustrial societies. With rapidly rising urban populations, these problems are only set to intensify unless radical changes are made.

Cities can either help or hinder (Boulange et al., 2017). By shifting the focus from cars to active modes of transport, urban transport planning can help foster wholesome environments, vibrant economies, and healthy populations (Handy & Xing, 2011).

Today, studies repeatedly demonstrate a value for walking and cycling across many spheres and scales of city life, including in terms of the economy, the environment, and health. Whilst many of these benefits are readily measured with traditional methods of impact appraisal, others are less immediately tangible—though no less real (Aldred, 2015; Krizek et al., 2007). Rather than simply a means to obtain other effects, the bicycle in many urban contexts is also an extremely efficient mode of transport in its own right (Börjesson & Eliasson, 2012). With transport accounting for the lion’s share of often-overstretched household budgets (Office for National Statistics, 2016), cycling offers citizens a cheap, fast, and reliable alternative to the relatively expensive private automobile.

The good news is this: the popularity of non-motorised modes of transport is on the rise across Europe and beyond (Bucher & Buehler, 2012). In addition, there is evidence that many developed countries have already reached ‘peak car’ – the apex at which car ownership and distance travelled by car begin to tail off (Metz, 2015). On the whole, however, decision-makers have been slow to capitalise on the full repertoire of beneficial effects associated with cycling, walking, and other active modes, leaving a great deal of untapped potential across today’s global urban environment. In order for this potential to be fully achieved, new visions, strategies, and actions are sorely needed.

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Activating the City: Areas of Untapped Potential

- Economic
- Health and Wellbeing
- Environmental
- Placemaking & Social Cohesion
Untapped Potential

The world is changing. So is transport. Amidst this shifting landscape, city leaders are increasingly called upon to demonstrate their leadership in terms of liveability and sustainability as well as prosperity. Yet conventional transport planning impact appraisal models and methods have on the whole failed to keep up with the fast pace of recent developments. Though there is substantial discourse around the benefits of walking and cycling, both to cities and to those that inhabit them, when compared to motorised modes of transport, the literature is less forthcoming about the way in which these benefits may be accurately measured and reliably captured.

The challenges are multiple. For example, there is little recognition of the full range of disbenefits associated with motorised modes of transport in current impact appraisal methods (Rajé & Saffrey, 2016), while the positive impacts of new road construction as a means of congestion relief are routinely overestimated (Nicolaisen & Naess, 2015). The full potential costs of cars and roads are only now becoming increasingly visible.

In addition, active modes have often been overlooked in traditional transport planning approaches since their distinctive features and attributes are poorly aligned with prevalent models and methods. One reason for this is that the modal share for walking and cycling is small, especially when transport planning focuses on distance travelled (International Transport Forum, 2017). Furthermore, in many models, a significant share of walking and cycling trips take place within a single traffic analysis zone and so are not captured in traditional analyses (Paez & Caviedes, 2016).

Compounding this problem, there is also concern within the literature that conventional impact appraisal methods do not incorporate the full extent of tangible and intangible benefits associated with non-motorised modes of transport; there is a need for hard data (Aldred, 2015; Krizek et al., 2007). Pinpointing the precise value of walking and cycling infrastructure and schemes is also complicated by the complexity of assigning specific benefits to specific causes (Pucher et al., 2010).

Taken together, these shortcomings may introduce a systemic and systematic bias into transport planning. As modes of transport compete for tight funding, there is a very real possibility that walking and cycling may be unduly discounted as viable options, despite having a strong, positive, and cost-effective impact on transport outcomes, in particular for congested urban road networks. For the full potential of non-motorised modes of transport to be realised, there is a need to develop impact appraisal methods that include the entire range of costs and benefits—taking account of both quantitative and qualitative impacts—across all modes of motorised and non-motorised transport. These models must move beyond easily quantified factors to encompass every aspect of the interaction between active transport modes, the city, and society.

The challenge is immense; but so is the opportunity. Studies repeatedly show that investment in non-motorised modes of transport like walking and cycling allow city leaders to do more with less, with benefit-cost ratios (BCRs) in the range of 5:1 to 35.5:1 (DfT, 2014). By contrast, the average BCR for local road schemes has been calculated at approximately 4.23:1 (Dodgson, 2009). Given the limitations with traditional impact appraisal methods, however, the real
difference between BCRs for motorised and non-motorised modes of transport may be even more impressive than this. When new visions, strategies, and actions are adopted, the full range and intensity of benefits associated with active modes like walking and cycling—the currently untapped potential of the urban environment—may at last be fully activated.

Active Economies

Research shows that non-motorised modes of transport like walking and cycling confer a wide range of economic benefits at a wide range of scales: from reduced infrastructure costs (Buis & Wittink, 2000) to boosts in local spending (Flusche, 2017) and enhanced job creation (Garrett-Peltier, 2011). We call these “active economies”.

Active bodies are healthy bodies. Likewise, active economies are healthy economies. Walking and cycling infrastructure can help develop and support economic vitality within the city; they should be valued accordingly. Indeed, investing in better streets and spaces for walking and cycling can provide a competitive return on investment when compared to other transport projects—providing up to £35.50 returns on £1 invested (DfT, 2016). As we shall see, incorporating active modes into the daily life of the city also reduces morbidity, mortality, and the associated healthcare costs. Given the challenges with monetising active modes in traditional impact appraisal methods and historical transport planning approaches, it is unlikely these economic benefits have been fully understood or fully realised in the past. This is recognised by the Department for Transport (DfT) who recently (August 2017) revised their guidance, increasing the monetised benefits of active travel. Research in this area is still evolving and as result the eventual benefits may be greater still (DfT, 2017a).

Many people have only a limited understanding of precisely how much they spend on their cars. In the financial year 2015/16, transport accounted for the single largest category of UK household expenditure: £72.70 per week (14%) (Office for National Statistics, 2016). Of this, the largest contributing factor was fuel (ibid). In Greater Manchester, another study reveals the negative impact of such high transport costs: 16% of households included within the study were unable to afford essential everyday items because of spending on transport (PTEG, 2010).

Active Commerce

By increasing footfall, improving accessibility, and reducing pressure on household budgets, studies show that transition to active modes of transport can have beneficial knock-on effects for local retail economies - sometimes in ways that are unexpected according to conventional planning logic. While the removal of on-street parking is often thought to negatively impact retail, reports show that investing in active modes through the provision of pedestrian areas or bicycle lanes and parking can actually stimulate spending within the local area - by up to 60% (US National Complete Streets Coalition, 2012).

Case Study 1 describes the example of the Dutch city Houten. It clearly demonstrates the economic value of designing cities from the ground up with active modes in mind. But what about existing urban spaces? Sometimes simple measures can unleash considerable benefits. When a bike lane was added along Valencia Street in San Francisco’s Mission district, nearby businesses reportedly saw sales increase by a significant 60%; local merchants attributed this to an increase in pedestrian and bicycle activity in the area (US National Complete Streets Coalition, 2012).
Coalition, 2012). Similarly, the implementation of protected bike lanes as part of a “sustainable street” initiative in New York City reportedly lead to a 49% increase in sales along 9th Avenue (New York City Department for Transportation, n.d.). Sensitive attention to the spatial dimensions of commerce and consumption can further illuminate the economic cost and benefits of different transport modes: one study estimates that cycle parking delivers five times higher retail spend per square meter than car parking (Lee & March, 2010).

Traditional cost-benefit analyses of active modes generally do not consider these wider, indirect economic impacts of walking and cycling (Rajé & Saffrey, 2016). All over the world, planners and retailers routinely overestimate how many people shop (and want to shop) by car (Arup, 2016; Sustrans, 2006). This is especially true given advances in digital technologies and associated changes in shopping behaviours. A step change in planning visions, strategies, and actions is therefore needed—to redirect emphasis away from the role of cheap, abundant car-parking in commercial areas and towards the potential ripple effects of active modes as a catalyst for future economic development. Doing so will not only save on infrastructure costs and potentially promote spending but also free up large areas of the built environment for adaptive reuse.

Case Study 1 - The Cycling “Heaven of Heaven”: Houten, the Netherlands

Located about five miles from the city of Utrecht, Houten in many ways is a typical medium-density suburb: single-family homes line the streets; moderate rates of car ownership prevail; on average, there are 1.1 parking spaces per resident (Jaffe, 2015).

Yet in other ways, Houten is far from typical.

In Houten, traffic is restricted to a ring road that surrounds the city; there are no direct links for cars between residential areas. Within the ring road, a network of low-speed streets intended for cyclists and pedestrians connect two intercity train stations, as well as most of the city’s schools, shops, and amenities. Alongside 129 kilometres of brick-red cycle paths, a bike-sharing scheme enables users to rent bikes for a twenty-hour period; each bike comes equipped with a lock, allowing users to park the bike throughout the day. Unlike many other bike-sharing schemes, this makes it easier for users to utilise the scheme to run errands throughout the day.

“If the Netherlands is heaven for bicycles”, says Peter Furth (Powers, 2013), Professor of Civil Engineering at Northeastern University in Boston, then for him “Houten is the heaven of heaven.”

Taken together, Houten’s built environment and bicycle-friendly policy measures result in a high level of traffic safety for cyclists and pedestrians, as well as a large modal share for walking and cycling. In total, 42% of trips shorter than 7.5 kilometres are made by bike, with around 21% completed by foot (Foletta, 2011). In turn, this translates into high levels of overall physical activity; on average, the residents of Houten are more active than people in both neighbouring Veldhuizen and the Netherlands as a whole (Foletta, 2011). In addition, a high modal share for active modes like walking and cycling means economic benefits for the city: two-thirds of the average household budget is spent in the city itself. Studies indicate that the turnover per m² of shopping area in this pro-bicycle city is 2.5 times higher than elsewhere (Buis & Wittink, 2000).
Active Infrastructure

Active modes can significantly reduce spending not only for individuals, but also for local authorities. In the US, it is estimated that $1.72 trillion is required by 2020 for repairing and upgrading existing road infrastructure (American Society of Civil Engineers, 2013). In England, an estimated £30 billion has been proposed for investment in road infrastructure from 2016 to 2021 (Berry, 2014).

There are other, less direct, costs associated with roads and cars too. Case studies (Akbari, Rose and Taha, 2001) show that in commercial areas parking can account for 25-54% of the urban environment. This car-parking infrastructure represents a massive amount of potentially taxable property. Yet much of this space is being “given away” for free. In the US, for example, one study found that 99% of trips by car end up in a free parking spot (Shoup, 2011). At over $127 million in 2002 alone, the value of that land and the cost of maintaining it in effect represents one of the largest public subsidies in existence (ibid).

By contrast, non-motorised modes of transport like cycling and especially walking require relatively little investment in physical infrastructure. Improvements in walking and cycling infrastructure can thus reduce costs per user and lessen maintenance costs over the long-term (Buis & Wittink, 2000). In addition, the decreased use of motorised transport can maximise the overall duration of urban infrastructure and reduce the negative collateral effects of car traffic, such as pollution, congestion, and damage to building facades (Arup, 2016)—each of which contributes in turn to a substantial rise in costs.

Active Employment

In addition to cost-savings on infrastructure and a boost in local spending, active modes also carry a significant benefit in terms of job creation (Garret-Peltier, 2011) and other employment measures (Swift et al., 2016). For example, companies’ promotion of cycling to work has been shown to lead to lower job turnover (Hendriksen et al., 2010), reduced absenteeism (ibid), and improved productivity (Oppezzo & Schwartz, 2014), as well as a more attractive working environment for skilled professionals and members of the emerging creative class (Florida, 2002; Arup, 2016; Rajé & Saffrey, 2016). There is also evidence of less immediately tangible or quantifiable benefits: an increase in physical activity has been correlated with a higher rate of innovation (Oppezzo & Schwartz, 2014). A great believer in the intellectual virtues of physical activity, the philosopher Friedrich Nietzsche famously declared, “all truly great thoughts are conceived by walking.”

In recent years, the economic value of active modes as a driver of prosperous tourist economies has also been emphasised. An investment in greenways for travel by foot and bicycle can help tourists become more intimately acquainted with the heritage, culture, and landscape of an area, with economic benefits for the region as a whole (Palau et al., 2012). Active modes can create jobs directly, too. A report published by the U.S. National Complete Streets Foundation found that cycling adds over $556 million and 3,400 jobs to Wisconsin’s economy through increased tourism, sales and repair, bike tours, and many other tourism-related activities (Bicycle Federation of Wisconsin, n.d.).
Given the various economic benefits associated with cycling, walking, and other non-motorised modes of transport, it is no wonder that cities and businesses the world over are beginning to place active modes at the very heart of their identities, agendas, and practices.

Active Modes: The Natural Choice?

In 2017, the U.K. Department of Transport (DfT) published its *Walking and cycling Investment Strategy (DfT, 2017b)*. Its aim: “to make walking and cycling a natural choice for shorter journeys, or as part of longer journeys by 2040.” By developing and implementing Local Cycling and Walking Infrastructure Plans, city leaders have a significant role to play in realising this aim, as well as much to gain in doing so.

£1 billion +

Government Investment in cycling and walking schemes and infrastructure over the next 5 years.

Get Britain Cycling have set a target for 25% of all trips to be made by bike by 2050. If this target is met the annual benefits in 2025 would be £6.4 billion, rising to £42.6bn by 2050 (Crawford and Lovelace, 2015).

Health and Wellbeing

“The potential benefits of physical activity to health are huge. If a medication existed which had a similar effect, it would be regarded as a wonder drug or miracle cure...”

- Sir Liam Donaldson, former Chief Medical Officer for England

Across the world, physical health is declining, owing in part to high rates of physical inactivity—the fourth leading risk factor for global mortality (WHO, 2015). According to one study, physical inactivity accounted for more than 5.3 million of the 57 million deaths that occurred globally in 2008 (Lee et al., 2012). In the UK, this percentage is higher, with physical inactivity accounting for 10.5% of coronary heart disease cases; 18.7% of colon cancer cases; 17.9% of breast cancer cases; 13.0% of type 2 diabetes cases; and 16.9% of premature all-cause mortality (Loughborough University, 2014). Many of these chronic conditions could be prevented by promoting physical activity amongst currently inactive populations.

The social cost of these conditions is huge. So is their economic cost. In 2006/7, the total direct costs of inactivity to the NHS was estimated to be £1 billion (DfT, 2015). When the indirect NHS costs are taken into account, this amount increases several-fold to at least £9.2 billion (ibid). One study has estimated the overall total cost to the UK economy of CHD alone to be a massive £6.7 billion per year (in 2009 prices) (Townsend et al., 2012).

Though there is an increasing awareness of the considerable social, medical, and economic costs of physical inactivity, these continue to grow (Mitchell et al., 2011). In response, active commuting has been recommended as a practical way of incorporating more physical activity...
into the daily life of the city, thus reducing the rates of morbidity and mortality (Swift et al., 2016). As Hippocrates, the father of modern medicine, asserted, “walking is man’s best medicine.”

Today, a substantial and growing body of international evidence indicates that active modes like walking and cycling are associated with a wide range of health benefits. For example, a recent meta-analysis of 173,146 participants reported that cycling was associated with a significantly lower risk of cardiovascular disease, cancer, and all-cause mortality than non-active commuting (Celis-Morales et al., 2017). Another study found that people who cycle to work experienced a 39% lower rate of all-cause mortality compared to those who did not—even after adjustment for other risk factors, including leisure time physical activity (Boyd et al., 1998).

Importantly, approximately 3% of the U.K. population account for 47% of secondary healthcare costs (Oliver Wyman, 2014). Increasingly, this disproportionate share of healthcare costs is driven by people with multiple chronic co-morbidities. For instance, 85% of people with coronary heart disease also have another chronic condition such as type 2 diabetes and/or hypertension, with each additional condition driving an increase in the costs of healthcare (Kasteridis et al., 2014). By generating a “protective effect” (Swift et al., 2016) against the development of these and other chronic conditions, active transport modes, correctly targeted, could result in huge healthcare savings across the lifetime of at-risk individuals.

Alongside the objective health of the city, active modes can also drive an increase in subjective measures of happiness and wellbeing (Humphreys et al., 2013). For example, studies have shown that cycling and walking are associated with a sense of freedom and empowerment amongst the elderly (Zander et al., 2013), improved alertness and achievement in schoolchildren (Living Streets, 2008; Rauner et al., 2013), and an all-round sense of greater wellbeing (Martin et al., 2014). Clearly, the built environment of the city plays an active role in shaping transport choices (Boulange et al., 2017), with both immediate and short-term effects for the health and wellbeing of its inhabitants as well as its economy.

Environmental Benefits

A sense of concern for environmental health and wellbeing may represent one of the most straightforward of drivers for increased uptake of active modes like walking and cycling. While individuals cannot control many of the factors impacting the health and wellbeing of their immediate environment, changing everyday transport choices offers people one simple way to make lasting changes.

The clearest case for the environmental benefits associated with active modes like walking and cycling is in terms of air pollution—one of the greatest challenges of our time. According to the World Health Organization (WHO), approximately 80% of the world’s urban population experiences air pollution that exceed the recommended levels (WHO, 2016). Overall, ambient air pollution translates into 3.7 million premature deaths worldwide each year (WHO, 2012). In the UK, outdoor air pollution is linked to 40,000 premature deaths every year (Royal College of Physicians, 2016).
Alongside the medical costs of local air pollution, the economic costs are also significant: approximately 2% of GDP within developed countries and about 5% of GDP in developing countries (Arup, 2016). The economic cost of deaths from air pollution in the UK alone has been valued as high as $83 billion (£63.7 billion) annually (WHO, 2010).

The car is in large part to blame. In the UK, road transport remains the primary source of nitrogen dioxide emissions despite the introduction of emission control strategies (Gregory et al., 2016). Although technological innovations and policy changes have led to significant decreases in per-vehicle emission rates over the past two decades, these have been partially offset by the increasing numbers of vehicles as well as the increasing power output of diesel cars (ibid).

By reducing the number of cars on the road, active modes thus harbor significant potential for beneficial impacts on air quality (Arup, 2016). In September 2015, Paris’ Journée Sans Voiture (Day Without Car) cut levels of nitrogen dioxide by 40% in some parts of the city, revealing how even a single day without traffic can generate huge benefits for urban environments and inhabitants (Airparif, 2015). One London borough has estimated that introducing a weekly vehicle-free pedestrian day on certain roads will reduce NOx levels by 11% (London Borough of Lambeth, 2016).

If local air pollution presents a matter of immediate concern to cities across the world, climate change poses an even greater long-term threat. Today, cities are a major driver of climate change, accounting for 75% of global carbon dioxide emissions (United Nations Environment Programme, n.d.) with transport accounting for 30% of global final energy consumption (International Energy Agency, 2013). Worryingly, urban transport resists the trend seen in other sectors towards reduced carbon dioxide emissions. Between 1990 and 2007, for example, EU carbon dioxide emissions fell in all sectors with the sole exception of transport, where they increased by 36%—mainly attributable to private cars (EU Transport GHG, 2011). Though many Western countries have reached or are approaching ‘peak car’, the private automobile is still experiencing boom times in Asia. Under current trends, carbon dioxide from global urban transport will soar from 2.3 gigatonnes in 2015 to 4.3 gigatonnes by 2050, with considerable consequences for climate change (Mason, Fulton and McDonald, 2015).

As a result, transport planning must be moved into the very heart of climate change mitigation policy. By 2050, the EU has set about reducing its greenhouse gas emissions (GHGs) by 80 to 95% compared to 1990 levels, while the transport sector will have to reduce its emissions by an estimated 60% (European Commission, n.d.). When evaluating different transport modes, studies repeatedly show that it is active modes of transport (and especially cycling) that allow for the most significant greenhouse gas savings.

According to the European Cycling Federation (ECF), bicycles emit the equivalent of only 21g of carbon dioxide per kilometre per person, compared with 271g for cars and 101g for buses (European Cycling Federation, 2011). Overall, the ECF calculated that if all the EU nations achieved the levels of cycling seen in Denmark, this alone would account for between 57% and 125% of the EU’s official 2020 targets for reduction of transport emissions (ibid). Likewise, the Institute for Transportation and Development Policy concluded that an upshift in global cycling rates from 6% of all urban kilometres travelled (current rates) to 14% by 2050 would cut
overall CO\textsubscript{2} emission by 11\%, whilst also saving a cumulative $24$ trillion between 2015 and 2050 (Mason, Fulton and McDonald, 2015).

In addition to improvements associated with air quality and climate change, there are also environmental benefits to be made in terms of reductions in noise pollution, wildlife habitat destruction and a city’s Urban Heat Island (UHI) effect (Arup, 2016; Akbari, Rose and Taha, 2001). The transition from the automobile to active modes may also free up urban space for adaptive reuse (Arup, 2016), further amplifying the intensity of these ecological impacts. Indeed, several cities are already experiencing the many benefits of making a built environment better geared towards non-motorised modes of transport and a more active citizenry in general (ibid).

Vital Cities: Active Place-Making

By bringing people into a more intimate, embodied relationship with the urban environment, active modes can help foster a positive sense of a place for cities, with positive impacts for the perceived desirability and overall liveability of a particular place (Swift et al., 2016; Arup, 2016).

Studies repeatedly show that walkable and cyclable neighborhoods are attractive neighborhoods (Litman, 2010). In one U.S. survey, for example, 6 in 10 prospective homebuyers preferred a neighborhood that offered a shorter commute, pavements, and amenities like shops, restaurants, libraries, schools and public transportation within walking distance when compared to a sprawling community with larger lots and more limited walking opportunities (ibid). The same conclusions are supported by other studies (Rajé & Saffrey, 2016; Arup, 2016).

By enhancing the safety, accessibility, and attractiveness of an area, investment in active modes can help generate returns in terms of increased property values. One U.S. study has shown that pedestrianisation of a street can lead to an increase in office, retail, and apartment rents, as well as in home values (Walkscore, n.d.). In the Netherlands, another study found that a 50\% drop in traffic volume corresponds to 1\% increase in housing prices (Ossokina & Verweij, 2014).

**Improvements in Real Estate Value After Street Pedestrianisation** (Walkscore, n.d.)

*per square foot*

- Annual Office Rents: $9
- Annual Retail Rents: $7
- Annual Apartment Rents: $300
- Homes Values: $82

Though transport is generally thought of as an enabler of social connectivity, it can also drive social exclusion. As Danish architect and urban planner Jan Gehl puts it, the built environment can either “integrate or segregate” (Gehl, 2001). Importantly, studies show that replacing the automobile with active modes like walking and cycling has a part to play in helping to foster a collective sense of belonging and social cohesion within local communities. In Ireland, for
example, one study found that residents living in “walkable” neighborhoods exhibited greater levels of “social capital” than those living in car-dependent ones (Leyden, 2003). This meant that they were more likely to trust their neighbors, feel connected to the community, and be politically involved (ibid).

Other studies show that improving the accessibility of cycling has the potential to reduce levels of transport inequality and promote access to jobs, education, and social inclusion (Marchetti, 1994). Translating these impacts into benefits that can be included in transport project assessment is critical to reflecting the true value of walking and cycling in local communities. The many varied roles of these active modes need to be quantified if accurate decisions about transport infrastructure are to be taken.

Case Study 2 - Reclaiming the Streets: Ciclovía, Bogota, Colombia (Development Asia, 2016)

Like other rapidly urbanising cities, Columbia’s capital has exhibited multiple signs of a system under strain: overcrowding in public transport, traffic congestion, and pollution. In 1974, Bogotá introduced Ciclovía: car-free days. On Sundays and holidays, the city closes one hundred miles of roads to motor vehicles, reserving these for cyclists, skaters, and pedestrians. The Ciclovía routes connect all parts of the city, creating a space where all residents—rich and poor, old and young alike—can exercise, play, and interact.

Though it was started as a recreational programme, Ciclovía has helped to promote cycling as a low-cost, zero-emission alternative to cars and buses. It has also helped foster social cohesion in a city ravaged by inequality (Teunissen et al., 2015). Incredibly successful, Ciclovía-type programmes have today been implemented in cities across all the continents of the world.

| 70 MILES | 600,000-1.4 MILLION |
| streets closed to car traffic | users each time |
| 70 MILES | 600,000-1.4 MILLION |
| streets closed to car traffic | users each time |
| $3.23-4.26 | 2,000 JOBS |
| saved per dollar invested | created each Sunday |
| (healthcare costs) | |
| 100 CITIES | adopted similar programmes |
Conclusion: The “Virtuous Cycle” of Walking and Cycling

Imagine your city of tomorrow. What do you see?

As part of a wider sustainable transport strategy, non-motorised modes of transport such as walking and cycling clearly have a significant role to play in the future development of prosperous and sustainable cities. By replacing congested urban road networks and car parking infrastructure, active modes can help cities spend less on building, maintaining, and upgrading their infrastructure. By helping incorporate higher levels of physical activity into the daily life of the city, walking and cycling can also help reduce regional healthcare costs, both now and in the future. In addition, investment in active modes can help foster vibrant, liveable, and attractive communities—as reflected by increases in local property prices.

Though important, however, a focus merely on the economic costs and benefits of active transport modes might prove short-sighted. Working across multiple spheres and scales of policy-making, studies have shown that the positive impacts of walking and cycling can combine to generate a “virtuous cycle” of benefits that project far into the long-term life of the city. While some of these might be readily captured by conventional transport planning impact appraisal models and methods, others are not. How, for example, do you put a price on car-free streets, clean air, and a future from negative effects of climate change? And what about healthy, happy populations that feel safe and at home in their neighbourhoods?

Of course, not all cities are created equal. When it comes to investing in active modes, some race ahead while others lag behind. Either way, however, there is still much to be done: motorised modes of transport remain the norm in many urban spaces across the world, while the number of cars on the planet is set to double by 2040 (Smith, 2016).

Yet there are signs that the tides are finally changing. As already noted, reports indicate that North America, Japan, Australia, and many European countries may already have reached ‘peak car’. In a recent survey, 51% of U.S. millennials born after 1980 said that they prefer living in walking distance of shops, with only a short commute; many do not aspire to have a driving license (Mooney, 2015). Together, these and other developments suggest that the era of the private automobile may now be coming to a close—and not a moment too soon. In its place emerges a new age of active transport, active communities, and active cities.
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