The surprising availability of cycling and walking infrastructure through COVID-19

*Introduction*

“*There will be a huge amount of planning going to helping people to get to work other than by mass transit… this should be a new golden age for cycling*”

(UK Prime Minster Johnson, quoted in Hansard, 2020)

National, regional and city leaders have been calling for a rapid expansion of cycling and walking infrastructure as a response to transport issues arising from COVID-19. This viewpoint explores how the expansion and introduction of active travel networks can be rapidly facilitated as a by-product of the automobile obsession of 20th century planning. Whilst the physical infrastructure is available, and increasingly some finance is being made available, planners need to learn from existing examples to avoid the dangers of experimental logics.

The impact of COVID-19 across the globe has caused governments, organisations and households to reconsider how they function and for many mobility is a key focus of this adjustment. For transport planners and governments with responsibility for transit, the period has been one of professional turbulence, steering into an unknown period. The scale of disjuncture between pre-COVID-19 transit and the current situation in many countries is a novel condition for planning.

The spread of COVID-19 caused car transit globally to plummet, largely as a consequence of enforced restrictions on mobility and prevention of commuting to places of work and education. As lockdown measures were introduced car transport became something reserved for infrequent shopping and essential travel. Then, as these restrictions rescinded car travel returned, with varying degrees of speed. In China the modal share of private cars has changed, with 34% of residents regularly using private cars prior to the Coronavirus to 66% afterwards (Ipsos Mori, 2020). Car manufacturers have begun to market their cars with ‘anti-viral’ features, including air filtration and anti-microbial materials (Harper, 2020). Reports show that in Wuhan, the site of the first outbreak, new car sales have been increasing week on week since the restrictions lifted; a sign that some people are willing to make large financial decisions and some evidence that households are buying second cars (Bloomberg, 2020). If similar shifts in modal share are experienced elsewhere as commuting increases when mobility restrictions are lifted, it is likely that current road infrastructure will struggle to provide efficient transit.

Public transport operators have had to engage with complete suspension (as in Wuhan, China) or operational limitations through legally and societally proscribed social distancing measures (as in parts of the USA, UK, Germany and other countries), whilst simultaneously protecting and supporting their own staff. According to surveys in China public transport is being used by approximately 50% of the previous ridership (Liu, Xue and Huang, 2020), and transport operators are being advised to plan for a longer-term future with projected fewer users (Deloitte, 2020). If passenger numbers fall and social distancing measures are maintained on public transport, it is likely that increases in public subsidies will be required to maintain services.

For the better part of a century most cities internationally have prioritised these two modes of transport, with significant variation between the emphasis in particular locations. Contrast, for example, the public transport of New York (USA), Stockholm (Sweden) or Seoul (South Korea) with the car dominance of Denver (USA), Malmo (Sweden) or Sydney (Australia). Some cities have become so dominated by cars that citizens become shaped by automobility (Sheller and Urry, 2008), whilst travelling on public transport can be an affective experience, even if it highlights our intimate alienation (Bissell, 2010; Fujii,1999). Over the last century public funding has been targeted at providing efficient travel via car and public transport, with OECD governments typically spending 1% of GDP per annum on road and rail infrastructure[[1]](#footnote-1) (International Transport Forum, 2019). In 2018-19 in England Government expenditure on transport was approximately £480 per person (varying by region from £903 in London to £268 in East Midlands) (HM Treasury, 2019), of which £6 per person was on cycling infrastructure.

This confluence of the direct major costs of providing car-based and public transport, combined with concerns over health of public transport presents planning with a challenge to enable the mobility of cities through and after COVID-19. In addition to the direct costs associated with these forms of transport provision are the indirect costs. Nearly 50% of the global reduction in CO2 emissions experienced during the pandemic has been attributed to surface transport (Le Quere et al., 2020). Local air pollution has improved in many cities internationally as fossil-fuel powered vehicles have been used less frequently, highlighting to both citizens and policy makers the indirect impact of promoting car use in cities. Traffic driven air pollution is a continuous cause of illness and cost to public health, but the direct correlation between respiratory illnesses arising from air pollution and morbidity from COVID-19 (Wu, Nethery and Dominici, 2020) shows the prescient as well as long term necessity of moving away from polluting forms of transport.

One option that has been widely considered and implemented is the role of walking and cycling in addressing healthy, low-cost urban mobility. As London’s cycling and walking commissioner, Will Norman, put it “We have no choice. This is not ideological opportunism. This is a necessity.” (Taylor, 2020)

For those without access to a private vehicle, and for whom public transport presents a risk, cycling and walking may be a credible alternative to access essential services, such as chemists, grocery shopping and household necessities. Whilst for some it will not be possible, either because of personal physical limitations or limitations of infrastructure or space-time to walk or cycle to access these services, for many households this has become a new normal occurrence. As non-key workers begin to return to places of work they are presented with a restricted choice: a more limited range of public transport services; a potentially more congested and polluting private vehicle; or walking and/or cycling. Whilst decisions and behaviours will rarely be as starkly contrasted as the example, it serves as a summary of key concepts within the choice of transport mode.

The benefits of cycling and walking have been widely recognised in relation to health for decades, including in comparison to car driving (de Hartog et al., 2010; Celis-Morales et al., 2017) but COVID-19 has thrown their advantages into sharp focus. With limitations to where and how people can exercise, walking and cycling have become two of the few methods of receiving the direct health benefits of exercise during periods of lockdown (although in some cities even leaving the home has limited these forms of exercise to stationary cycling and running machines). The lower general cardiovascular risk induced by walking and cycling for the majority of the population is matched by lower mental health risks for people routinely exercising (Sharma, Madaan and Petty, 2006). Whilst this brings generalised health benefits, there are is also a direct connection to COVID-19, as it appears to have higher rates of morbidity in people with some underlying health conditions such as hypertension, diabetes and cardiovascular disease (Wang et al. 2020). When combined with the arguments regarding air pollution it is clear that there are both individual and population level benefits to supporting cycling and walking exercise.

*Transport policy responses to CV-19*

Internationally there has been widespread recognition of the role that cycling and walking should play during and after COVID-19. The array of city governments that have introduced new forms or expansions to cycling and walking infrastructure is extensive. The picture is changing daily as mayors and councils make new announcements, but at the time of writing this article we can see a wide range of contexts. Melbourne (Australia) has removed car parking spaces to create wider footpaths and has installed 12 km of temporary bike lanes. Vancouver (Canada) has repurposed some roads for walking and cycling and introduced an indefinite ban on vehicles in Stanley Park. Budapest (Hungary) has created 17km of pop up bike lanes; Rome (Italy) 150km. Paris (France) has indicated 650 km of temporary and permanent cycleways will be created, as part of a longer term strategy to make every street in Paris cycle-friendly. Even countries with extensive cycling and walking infrastructure already in place have been introducing more; Brussels (Belgium) has created an additional 40km of cycle lanes whilst Amsterdam has opened up car parking spaces for bike storage, introduced one way pavements (sidewalks) and has active interventions to redirect traffic through temporary road closures if levels are above perceived capacity. Other cities, however, have not responded similarly – with air pollution in Beijing now back to its previous year levels (CREA, 2020), attributed to heavy industry as well as increased car use.

Cities have recognised that entire cycling and walking networks can be created rapidly and at low cost through COVID-19. But, this experience is not limited to the pandemic, other cities have done it before. After two years of planning, in 2017, Ghent (Belgium) implemented an entire city’s worth of cycling infrastructure in one weekend. Whilst some new infrastructure was created afterwards, the major changes were to designate roads for cycling and reduce traffic through differentiated zones in the city. Streets were re-painted to clearly indicate cycling priority areas and concrete bollards and street furniture to prevent vehicles from cars from inadvertently accessing bike streets and protect cyclists. The bollards were created to be moved if required, but very few have been adjusted from their initial location in April 2017. The action of implementing these changes happened within 48 hrs and was rapidly adopted by citizens with little complaint. But, this was not a form of haphazard trial and error, it was the rapid action of a well-considered planning stage.

Prior to COVID-19 lessons from Ghent’s approach were beginning to be processed by city leaders from Auckland (New Zealand) to Liverpool (UK), recognising that a phase of planning would be required before implementation. With COVID-19 these timetables have been accelerated.

Why has it been possible for cities to make rapid transitions in cycling infrastructure during COVID-19? How have transport planners and city officials been able to create the largest expansion of cycling and walking infrastructure in history? Because, we would argue, as it turns out the investment associated with creating roads means they make good surfaces for cycling and walking. Thus, many of the interventions are relatively low cost, from the minimal cost of repainting symbols on the road and providing new signage through to the higher cost (although still very low in relative terms compared to other transport infrastructure) introduction of barriers such as simple ‘wands’ or protected cycle lanes. What is less clear is whether these new forms of cycling infrastructure will remain in place and whether they have been located in the ‘right’ places. In part this is the beauty of temporary infrastructure, it is malleable, city planners can learn and adapt, they can be transformed in recognition of the fluid and congoing construction of the city. But there are dangers in creating cycling infrastructure as a city laboratory[[2]](#footnote-2) (cf. Karvonen and Van Heur, 2014; Berglund-Snodgrass and Mukhtar-Landgren, 2020), not least politically, that poor transport experimentation may result in negative behavioural and attitudinal consequences that brings the iron pyrite age of cycling.

At a time when governments are committing large finances to rail upgrades to take larger and faster trains and roads are being widened to enable more rapid car transit, it turns out that existing transport infrastructure can be repurposed rapidly and at low cost to support safe transit and reduce the burden of a global pandemic. Whilst the opportunity is present, to make a lasting change will require a significant amount of planning.

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1. OECD data on road investment includes pavements and associated works within road investment. Where quoted independently, cycling and walking infrastructure is routinely a small proportion of road investment designed for vehicle use. [↑](#footnote-ref-1)
2. Interestingly, one of the key planning tools available to local councils in the UK to operationalise these new cycle lanes is called the “Experimental Traffic Order” which enables councils to impose traffic restrictions without prior consultation for a period of six months. [↑](#footnote-ref-2)