Urban Transport in the post-COVID era:
the same solutions for the same problems

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Freedom from the car as the ultimate goal of urban transport

We are all familiar with the history of urbanization in the last two centuries, mainly in Europe and North America, spreading in the last 50 years to the rest of the world. Of course, each city has its own history, but it is fairly easy to identify long term continental and worldwide trends.

The overarching trend in urban transport since the 1950's has, undoubtedly, been motorization. From America, to Europe, to Asia and Africa, some sooner some later, all large metropolises cope with congestion, scarcity of parking and pollution caused by car traffic. Even cities with old, large and developed public transport networks, the increase in motorization coincided with a long pause in the expansion of transit networks, at the same time new express ways were being built.

More recently, the dominating trend in the discourse has been around the concept of "smart and sustainable mobility", exemplified by the recently published European Commission Sustainable and Smart Mobility Strategy [EC 2020]. It is often completed with other adjectives such as connected, shared and digital.

The exact meaning of smart and sustainable mobility is not entirely clear, and it does not necessarily help when other adjectives are added, like "connected", "shared" or "digital". It is also likely that different stakeholders interpret them differently. This becomes clear when almost all transport solutions assign themselves several or all these adjectives.

One of the meanings of "smart and sustainable mobility" translates into the concept of Mobility as a Service (MasS). Like so many corporate buzzwords, its meaning is also not entirely clear. Most often, it is used in connection with ride-sharing, car-pooling, e-bike or e-scooter-sharing mobile applications. Also like many corporate buzzwords, all players in the sector suddenly feel like they need to adopt it if they are to remain at the forefront of innovation. The truth is that most solutions that adopt the MaaS label are individual mobility solutions, even if, at the end of the day, ridesharing and car-pooling are simply glorified taxi services.

There are, of course, positive examples and true useful innovation. Bike-sharing services are a good example, as they help overcome an important barrier to initial adoption of the bicycle as a mode of transport. These services help to bring more people to cycling.

The "sustainable" part usually refers to electrification or, more generally, energy transition in transport. Combustion engines in cars and buses are gradually being exchanged for batteries and

electric motors. It is still not clear if hydrogen can overcome its technical limitations and become widespread.

However, we must bear in mind that electric cars are not environmentally neutral. In fact, there are no environmentally neutral solutions, there are only better and worse solutions, from an environmental point of view. An electric car still needs energy, and needs batteries to store that energy, that needs to be produced somewhere. A railway takes up space, needs earthworks, tunnels and viaducts, it needs large quantities of concrete and steel.

The overall point is that simply shifting from combustion to electric engines will only help solve the problems with pollution and greenhouse gas emissions. Shifting from privately own cars to shared cars, whatever their power source, will only partially reduce the demand for parking, while its effects on congestion may even be negative.

Generally speaking, individual motorized transport is almost always worse than either collective or individual active mobility. There will always be exceptions, but this is true for the vast majority of cases, most certainly in cities.
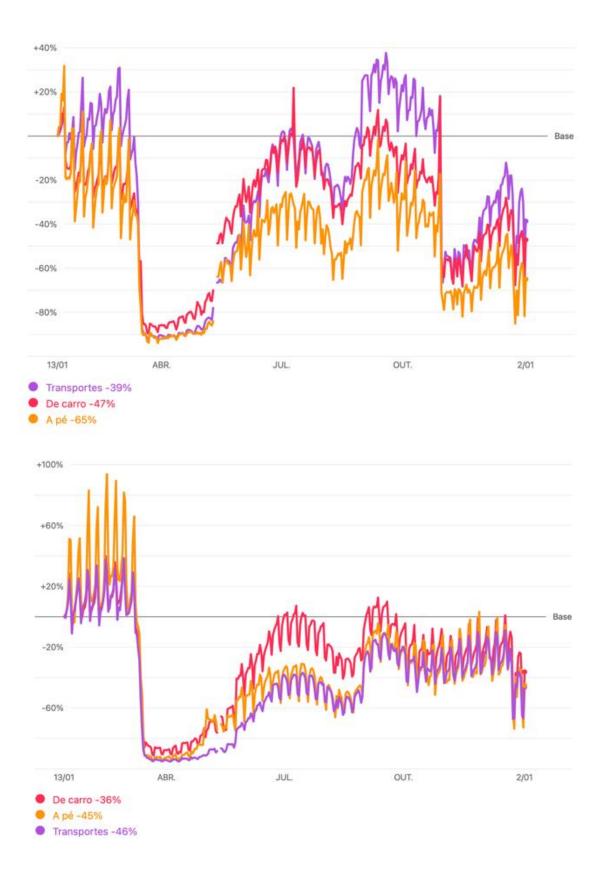
The need to regain trust

The COVID-19 pandemic, the lockdowns and the need for social distancing had a devastating impact on all collective transport systems. In a matter of days, streets became empty, while buses and trains became emptier, but not completely empty.

Even if urban transport systems always have a significant portion of direct public funding, ticketing revenue is still an indispensable part of their operating budgets. The situation combined a sudden fall in ridership with the need to keep most services in operation to transport essential workers, while attempting to keep social distancing. This led us to realize that there are large amounts of workers that cannot work remotely, especially, among what we now know as "essential workers", as trains and buses were still transporting too many people to allow for the recommended social distancing. On the other hand, we intuitively perceive that some people became afraid of using collective transport and returned to their cars for their commute.

As restrictions have been eased and reintroduced, people seem to gradually revert to their previous commute habits. Of course, we must also account for the impact of the drastic reduction in tourism that is likely to last for several years. The combined effects of regular and occasional passengers have been asymmetric in different cities.

The data collected by both Apple and Google from their respective mobile mapping platforms has been made available in mobility reports that yield some interesting results [Apple 2020, Google 2020]. Although these datasets have limitations, they provide us, at least, a proxy for the tendencies

in transport usage throughout the year 2020. The data provided by Apple actually allows us to compare the requests for itineraries by car, on foot and public transport and compare their evolutions. Taking, for example, the data from three European capitals, Paris, London and Madrid, we can see that, while in Paris public transport usage recovered faster than car usage, in London and Madrid it was the other way around. A good explanation for this difference would require a detailed study of the different factors, like the importance of tourism, policies during the lockdown or the extent and duration of the lockdowns themselves.
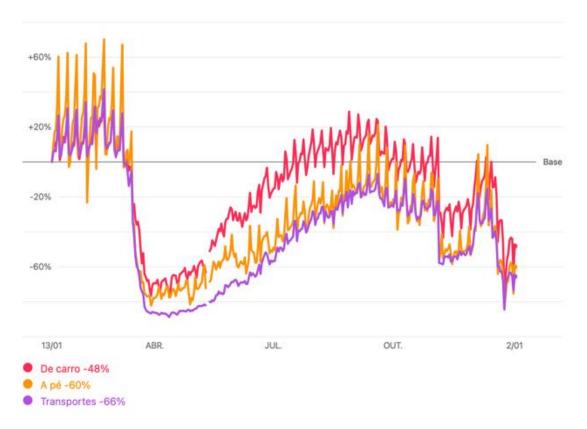
Transportes -39%
De carro -47%
A pé -65%

De carro -36%
A pé -45%
Transportes -46%

Figure 1. Mobility trends from Apple Maps application usage in Paris (top left), Madrid (top right) and London (bottom). Red lines are for car, orange for on foot and blue for public transport.

The immediate take from these results, shown in Figure 1, is that we should not take the loss in public transport as definite. Once the restrictions are eased, people tend to come back to their normal lives quite quickly. Even when restrictions remain in place, fatigue leads to a slow reversion to the mean. However, being an important milestone in people's lives, and indeed causing unexpected changes like unemployment or new employment for significant numbers of people, there is an opportunity to lead people to change their habits and adopt public transport as their transport of choice. While it is not possible to build new transit lines in a matter of months, it is possible, for example, to reduce fares. As has been shown in Portugal in 2019, a fare reduction has the ability to immediately cause a measurable shift in public transport usage.

It is still unclear how long it will take for people to fully regain trust in collective transport, but all indications lead to a fairly quick return to a previous normal, despite all the talk about a new normal. It may take longer in some places than others, but we will most likely arrive in a few months or a couple of years with more or less the same problems demanding the same solutions.

Ephemeral and Lasting Effects

Many cities have used the empty streets during the lockdown as an opportunity to redistribute public space, in what has become known as tactical urbanism. For the most part, this has materialised in the establishment of pop-up bike lanes and other means for reserving public space for future deeper interventions.

Some of these initiatives have faced the usual resistance when new bike lanes taking up space that was previously devoted to car circulation or parking face. Others have already been removed, such as the one in High Street Kensington, London. The dispute for public space is ongoing and has not paused during the lockdowns.

One the other hand, the sudden closure of most businesses caused a sudden shift to remote work. This is another aspect that has been lauded as part of a new normal. Indeed, this is not a new trend, but it is limited to some specific kinds of jobs, mostly, qualified office jobs. A vast portion of workers, now called essential, that cannot work from home. These workers also have a high correlation with lower incomes.

It is very tempting to assume long-lasting trends from short-term effects, but it can be misleading. If it seems that tactical urbanism will be successful in cities that can take swift action to make the changes permanent, it remains to be seen how much remote work will remain.

Technology is not the key

There are two main ways in which technology comes into the debate about transport.

The first and most common one is the talk about digitalization. Digitalization will not bring about any major change by itself, but it may help the transition. One example is the already mentioned bike-sharing services. In collective transport, digital technologies enable integrated ticketing and journey planning. However, no digital platform can move thousands of people without adequate infrastructure and rolling stock.

The second way that technology is brought into the debate about transport is when entirely new solutions are promoted to tackle the challenges of mobility. These technologies come in different stages of maturity but almost always with soaring promises to revolutionize mobility. Examples of such are HyperLoop, autonomous cars, flying cars or autonomous flying cars, the latter being dubbed as drones.

Arguably, this kind of proposals can mislead for policy makers, by shifting their attention from readily available solution in favour of a promise of a much better "revolutionary" concept, usually promised for only a few years in the future. The problem is that the promises, often, don't survive a detailed

scrutiny and, when they are feasible, might be decades in the future, like HyperLoop or only affordable for elites, like flying cars.

Of course, technology is far from irrelevant, but the solution must fit the problem and not the other way around. As mentioned above, the key challenge of urban mobility today is modal shift away from individual motorized transport. The key transport technologies needed for this are, essentially, the ones that have been available for over a century: trains, trams, buses and bicycles. Of course, being old, they all have had over a century of incremental improvement, leading to new approaches to those same technologies like tram-train or Bus Rapid Transit (BRT).

The layer of digital technologies and applications allows to make these systems and networks easier to operate and to use, and that is their key goal, but they do not replace the investment in infrastructure and equipment.

City design is the key

One key difference between urban transport planning nowadays and the first half of the twentieth century is the central role that urban planning and public space architecture have taken in the planning of the transport networks themselves.

In the late nineteenth and early twentieth centuries, major cities embarked on the construction of transit networks that tried move people while trying to avoid the congestion on the surface. This was the golden age of underground and elevated urban rail networks. Although some fast-growing cities in China have built huge underground networks in the last few decades, the trend across the world has been to move towards the coexistence of transit networks on the surface, making them more effective and efficient.

The vast majority of non-built-up areas in any major city is devoted to the automobile, either for circulation or parking. Some cities in North America took this car dominance of the public space to extremes, with vast parking lots and wide avenues and expressways cutting through the centres of major cities.

Public space is a scarce resource in cities. For that reason, it is a matter of social equity, before all, to ensure its adequate distribution. It is inevitable that space for cars needs to be reduced in order to provide more space for walking, cycling, for public transit or even just to stay. Despite frequent resistance from residents and local businesses, it has been shown time and again that this kind of intervention in city streets leads to positive results for all concerned: public space becomes more pleasant, public transport works better, becoming a more attractive option, and local commerce increase their movement. In the end, a dull and dangerous avenue can be turned into a lively neighbourhood plaza.

The role of the neighborhood should also be highlighted here. The concept of a "15-minute neighbourhood", where all essential services are within reach for every resident without the use of a car, has seen widespread adoption in academic and planning communities. There are good examples of entirely need neighbourhoods built under this principle, but it is more difficult and certainly slower to transform an existing part of a city into such a neighbourhood. Many cities already went through a decades long process of urban sprawl with vast residential areas built around the car. These situations present a great challenge. Still, the redistribution of public space is an indispensable part of it, and often one of the first steps.

This is why the shift towards a transit-oriented development is the only change that can bring about a truly decisive modal shift in urban transport. A city made up of multiple neighbourhoods, crossed by public transport lines that connect to other neighborhoods.

Railway Stations as Central Hubs

The transit neighbourhood principle explores in the previous section can be adapted to a larger scale when we are talking about larger cities that have large and very dense centres. Also, when considering a territory with multiple cities of different sizes, the urban transit system of each one of them needs to connect to the intercity transport network. The sustainable mode of transport for intercity travel is, unquestionably, the railways.

This is why, in many cities across the world, great railway stations are reasserting their role as central hubs, not only of mobility, but of public life.

In New York City, the demolition of Penn Station in the 1960's has been regarded as one of the largest acts of public vandalism in history. An effort to make it right is underway, along with the expansion of the station itself, making it ready to handle 900 000 passengers every day. On the first day of 2021, a new Train Hall has been opened, partially recovering the past grandeur of this historic station [MTH 2020].

In Paris, Gare du Nord, the busiest rail station in Europe is also going through a major renovation and expansion, along with the public space surrounding it [StatioNord 2021].

These two projects serve just as examples to illustrate their common aspects. In their function as transport hubs, they concentrate all modes and scales of transport, from intercity trains, to local trains, to urban mass transit, to bike parking and sharing. In their other function as hubs of public life, they offer large and beautiful in-door and out-spaces, including shops, restaurants and gardens.

The overarching theme of this article has been to show how we already have the key problems identified and the required solutions. In the world, and indeed in the Western Mediterranean region,

countries and cities advance at different paces, but there should be no shame in copying the good examples next-door and learning from others' mistakes. It is impossible to know if, a few decades from now, we will be able to look at the years 2020 and 2021 as a turning point in urban transport. Let us, at the very least, not reverse the positive trends that are already underway.

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