Mobilities: from the age of possibilities to a new world of mobility?

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Introduction

When we announced 10 years ago that mobility was entering the age of possibilities (Orfeuil, 2008), a large-scale public bicycle scheme was being launched in one French city, Lyon, but you had to go to China to find significant use of electrically assisted bicycles. Car sharing was growing, but at a snail's pace. BlaBlacar was as yet nothing but the private website covoiturage.fr. Taxis were still able to sleep soundly. Integration groups were exploring mobility learning (cycling, map-reading…) and providing support for mobility in low-density areas by helping people pass their driving test and running social vehicle rental services, but all still below the media radar…

That was 10 years ago. Velib, Autolib, BlaBlacar are now well-known brands, part of the landscape. Electric bike sales have gone through the roof, and there are more and more novel objects on the roads (solowheels, electric scooters). Rising awareness of mobility has directed attention to the question of "mobility blank zones", those areas that are home to almost half the population, but devoid of alternatives to the private car. New forms of sharing have appeared, with peer-to-peer car rental and the sharing of private parking spaces. Private-hire vehicle services are doing well in the world's big cities. France has come into line with its neighbours by authorising coach transport (the "Macron" coaches). The prospect of autonomous vehicles has attracted tens of billions of dollars in investment around the world and fired imaginations for a new mobility.

At the same time, positive collective representations around the private car have faded, as has the belief in mass transit systems as the only possible alternative to the automobile. A new age of possibilities has emerged, founded on aspirations that combine lightness (Lipovetski, 2012) and sharing. Lightness of objects, with urban surf-culture items like electric bikes that have put part of the population back in the saddle, lightness of relationships, with the insertion of "community" between the individual and the impersonal collective, as evidenced by the success of social media. One light object that has taken the planet by storm, the smartphone, plays a central role in this.

Is this age of possibilities a new world, destined to replace the old order in a process of creative destruction, or does it simply add new possibilities to an order that still has its foundations in private vehicles and public transport?

To try to answer this question, we will begin by going back over the last 10 years and seeing what lessons can be drawn from what has happened. We will see that all the new mobilities present today constitute not a coherent and collaborative ecosystem, but rather a disconnected set of niches operating in their own isolated worlds, with their own culture. We will explore our capacities to change this situation, in other words to effect a transition towards an ecosystem of urban mobility that is more respectful of the load-bearing capacities of the city and the environment.

I Ten years into the age of possibilities, a mixed record

The new mobilities have made remarkable inroads into everyday habits and vocabulary. Ten years ago, surveys in France asked people whether they knew the meaning of words like car sharing and ridesharing. These days, they ask respondents directly whether they practise or have practised car sharing or ridesharing, and forms of travel other than the private car and traditional mass transit. The responses (Obsoco, 2016) indicate levels of use that are now more than anecdotal: 3% for car sharing, 5% for public bicycle schemes and peer-to-peer rental, 10% for private-hire vehicles, 15% for "Macron" coaches, 23% for cycling, 30% for ridesharing. So these modes have now entered the mental universe of millions of people. This wider awareness of the available modes is good news. It increases the capacity to adapt in the event of crisis (major public transport strike, sudden increase in fuel prices…) and obliges the historical operators to shift from a monopolistic to a competitive vision.

Nonetheless, overall the new mobilities remain a very small minority: all systems included, less than 1% of the automobile stock is shared.[1] BlaBlaCar in France, which has achieved unicorn status in the business world,[2] accounts for the equivalent of around 5% of the long-distance traffic carried by SNCF. Private-hire vehicles carry about the same number of passengers as taxis, representing around 1% of total travel. In Île-de-France, Vélib' accounts for at best 200,000 trips a day, as compared with 15 million each for cars and walking, and 8 million for public transport. Moreover, Vélib cycle trips are short. More generally, while it is true that bicycle use has exploded, it accounts for only a few percent of journeys.

This modesty in the contribution of the new mobilities to meeting global demand cannot be explained by an improvement in the service provided by traditional modes. In Île-de-France, for example, travel speed – which historically has steadily risen – is now on a downward trend (Orfeuil, 2017). Car travel is becoming slower, an outcome largely sought in order to discourage car use. However, the same is also happening in public transport, despite a significant development effort, because of "dysfunctions" in the

[1] Traditional round-trip car sharing, Autolib type one-way car sharing, peer-to-peer rental, excluding informal sharing between family or friends

[2] Unicorn: a start-up valued at more than $1 billion

systems, especially in Île-de-France. But also because, when people are dissuaded from driving, they are obliged to use public transport even if their starting points and destinations are further from the stops, and even if they have to make travel connections that they would not previously have considered.

Finally, with experience, there has also been a challenge to the idea that all the new mobilities contribute to more fluid movement and constitute alternatives only to private car use. In Île-de-France, while round-trip car sharing (6t, 2013) and electric bicycle use (6t, 2015) are indeed associated with reduced car use, Vélib users primarily come from public transport. Autolib users reduce their private car use less than traditional "car sharers". In London, Tony Travers (Financial Times, 2016) notes that "London is close to proving that you can take away all the private cars and still have chronic congestion. Simply because there are large numbers of deliveries, public space for motorised vehicles has been restricted and private vehicles have been replaced by taxis and private-hire vehicles". In New York, Bruce Schaller (2017) observes that the success of private-hire services has led to an increase in motorised traffic in the centre of New York, and a reduction in bus customers in the last three years and more recently in subway users. These observations are not directly applicable to France, where public transport pricing is much more favourable to users, but they nevertheless challenge the idea that the shared car will only take traffic away from the "solo" car.

II The new mobilities today: a new world, or a thousands of small units?

The new mobilities are appealing, and attract significant media coverage, which presents them in an attractive light. Nevertheless, their role in total mobility remains fairly small in France (and even in Île-de-France). Several possibilities can be put forward, not just to explain this weakness but above all to imagine a more robust future for these new mobilities.

The most conservative possibility is that they are destined to remain somewhat on the fringes. The fact is that cars are constantly improving,[3] the cost of the "entry-level new car" expressed in hours of work has never been as low (around 800 hours on the minimum wage for a Logan, as compared with 3000 hours for a 2CV in the early 1960s) and the second-hand market is well organised. Fuel prices are no longer falling much (thanks to fuel taxes), but the idea that they could go through the roof is no longer an issue with US shale oil. The public authorities continue to offer residential parking to their voters at very competitive rates. The range of public transport has improved and prices for users, who pay scarcely a quarter of the full cost, have fallen; more and more people live on the outskirts of cities where the car has long proved its worth, whereas the new mobilities (with the exception of the bicycle) have hardly made their presence felt. In these circumstances, the new mobilities offer an ancillary option, opening

[3] And will continue to do so with systems to assist with parking, rush-hour driving, dynamic guidance, and connection capacities that will incorporate more and more services…

up a space of possibilities that is only really activated on fairly special occasions, or by very specific segments of the population. This is how taxis have survived over time, and the occasional nature of their use does not preclude their social utility or their economic viability.

A second possibility is that behavioural changes to a large extent take place more through generational shift than through changes in the behaviour of existing generations, who are set in their ways. This is the argument often advanced in the US, with multiple studies on the behaviour of the "millennials", of "generation Y", of the "digital natives", i.e. those who have been familiar with digital technology, smartphones and their apps since childhood. The first American studies (Orfeuil, 2015) showed different travel behaviours among young "millennials" than among young people of the previous generation: fewer have driving licences, they are much more likely to cycle, to use apps, to travel by public transport. There was a degree of wishful thinking in some of these studies and they all ignored the fact that, at the time, these young people were heavily affected by the crisis, more heavily than the other generations. In fact, subsequent studies have tended to show that as they aged, formed couples and had children, a significant proportion of them came to adopt the behaviour of the previous generations, to the point that Fabrique de la Cité (2017) even speaks of the concept of millennials as an urban legend. Nonetheless, these generations are more open to the use of a diverse range of modes. They will be more likely to latch onto the new mobilities if the other modes become less attractive. By way of example, we know that on-demand transport (private-hire vehicles, taxis) is much more popular in American cities where parking costs are the highest (Cortright, 2016). So this argument should not be rejected at a time when France's big cities are intensifying their efforts of dissuasion aimed at the private car and have increased means for doing so, with the decentralisation of parking and the right to experiment with urban toll systems.[4] The existence of new mobility options can be a factor that both facilitates the decision to introduce further dissuasive measures against the private car, and a relevant solution when dissuasion is already in place. So the possibility that growth will continue with new generations should not be rejected. However, it needs to be qualified, since the process is not as automatic as was previously assumed, and the transition towards the new mobilities will not be made by an entire generation.

The third and final possibility is probably the one that offers the greatest scope for a bigger role in the future: the actors of the new mobilities have been successful in conducting effective "commando operations" to maintain their own existence, but each has done so on in isolation. For this reason, users today tend to see the new mobilities in terms of "good ideas" rather than as offering a vision of a new world, while the authorities perceive them as supplementary solutions. In addition, the latter make no distinction between the cars used by these new services and private cars, with the result that the congestion arising from the reduction in the quantity of space set aside for traffic is experienced in the

[4] A right that dates back to the Grenelle II Act of 2010, though one that cities have not yet implemented.

same way by users of the old world and those of the new world. Finally, these new mobilities do in fact constitute a set of instrumental resources capable of meeting the large majority of needs, at least in the central parts of cities, but there are too many keys (subscriptions, apps, codes, etc.) and skills required to access those resources. These handicaps are the price that the new mobilities are paying for having been unable, or unwilling, to present the image of an integrated ecosystem, which could have been perceived as a global mobility solution offering an alternative to the private car and as the instrument of a transition to a new world.

This situation is not surprising, since the world of the new mobilities is young, and sociologically highly diverse. Round-trip car sharing was backed by environmentalists. Peer-to-peer car sharing was driven by young business school graduates who wanted to "set up their own business". Private-hire transport (called VTC in France) is associated with the inflammatory image of Uber and its ultraliberal young ex-boss. Autolib and Vélib were set up by captains of industry who wanted to signal their contribution to the common good by collaborating with big-city mayors. After decades of public neglect of the bicycle, the bicycle sector itself has not always been enthusiastic about electric bikes, took its time in setting up an effective lobbying body, the "Club des villes et territoires cyclables", and to involve the sector's big players, bicycle support and promotion organisations…

This sociological diversity is unquestionably a handicap in spontaneously presenting a unified image, but is perhaps not a crippling obstacle to establishing a coherent alternative ecosystem if this is organised by a third party. That is what SNCF is trying to do in France, on a somewhat piecemeal basis. It has tested electric scooter schemes in certain stations, has acquired Ouicar and a car sharing company renamed Idvroom. It would seem that this is not enough to bring these systems into the mainstream.[5] It could be that some public actor might be willing and able to unify this diversity. This is what Helsinki is attempting, with the concept of "Mobility as a Service" (MaaS) based on the idea of an alliance between public transport networks and the new mobilities, unified by an app – Whim – that provides an information system covering all available modes (public transport, taxi, bicycle, rental car), route calculations that users can set to match their mood (shortest journey, pleasantest journey…) and integrated pricing (including a monthly subscription). It is an ambitious proposal, since it aims to remove the need for citizens to *own* a car, not just to use it less, and its target is to eliminate all private car traffic by 2025. In this respect, it has the means to match its ambition: the cost of the "all-modes" subscription is set to range from €500 (city centre) to €600 (city region), which is the same order of magnitude as the total annual cost of car ownership.[6]

[5] So, for example, some 60 stations in the "Transilien" network have spaces reserved for Idvroom users, However, each of them have just 2 or 3 reserved spaces…
[6] Vehicle tax in Finland is even higher than in France.

III The new mobilities tomorrow: the possibility of an alternative and a transition?

The experiment underway in Helsinki prompts the question of whether mobility can be provided in big cities in similar conditions to today, without citydwellers needing to use a private car. Several respectable academic studies (Fagnant, 2014, Martinez, 2016, Spieser, 2014) conducted respectively on Austin (Texas), Lisbon and Singapore, answer in the affirmative. More precisely, beyond their methodological differences, they suggest that a mobility system founded on three modes (walking and green modes, including electric bikes, for fairly short trips, public transport for "mass transit" travel, on-demand transport by taxi or collective taxi for all other journeys) can provide citydwellers with the same level of mobility that they have today, at a monetary cost no greater than at present, and with a rapidity at least equal to current rapidity.

Moreover, implementing such a system would bring substantial urban benefits: a very sharp reduction in the number of vehicles needed, much greater ease in electrifying mobility with rapid fleet renewal, a very large reduction in urban parking space, and a significant fall in peaktime congestion. Promoters of autonomous vehicles add that the cost of this system could be further sharply reduced by using robot taxis to replace human drivers, who account for some half of the total cost of such services.[7]

This is undoubtedly an attractive prospect, although it glosses over a number of important points. Private vehicle traffic and parking are also sources of tax revenue for local and national authorities, and they may be reluctant to forego them. For politicians, providing on-demand transport services, however extensive, may not have the same symbolic value as delivering a tram service in a mid-sized town or a Grand Paris Express in Île-de-France. The private car is also a private space, which acts as a capsule between two activities, where personal belongings or documents can be stored, which will not be the case with shared vehicles… The private car is used for urban travel, but also to get out of the city, or to make long-distance journeys, and a solution will also need to be found for these uses.

The most difficult question, however, is that of *transition*. As evidenced by the ferocious competition for market domination between Uber and Lyft in the US, the more potential users an on-demand transport system has, the more efficient it is: waiting times are reduced, costs are lower, etc. this is the so-called "club" effect. Unfortunately, citydwellers cannot be expected to give up their cars all at the same time, so the efficiency of any on-demand transport (ODT) system will start out low. The challenge is to design a trajectory in which it improves year-on-year, with growing encouragement to use ODT wherever possible, without this encouragement being an absolute obligation in cases where the private car offers markedly better quality of service, in order to avoid pushback reactions. The authors of the Lisbon study proposed that each private car should be banned from travelling on one working day in

[7] We will not tackle this prospect here, since we have explored it in detail elsewhere (Orfeuil, 2018)

five, based on registration plate, then – after a certain period – on two days in five, and so on. This seems a little clunky. One might imagine that with today's connected cars capable of sending their movement data, an urban toll system reflecting use of the network could be put in place quickly and at fairly low cost. It could initially be virtual, in the sense that in the first year it would send out a bill that would not need to be paid, but would raise user awareness. In the second year, only vehicles that had been on the road for 29 or 30 days in the month would pay, and so on. After 15-20 years, users would pay even if their vehicle had been on the road only a few days in the month. These are just examples intended to emphasise the fact that a transition is a vision that matures over time.

Conclusion

The world of the new mobilities is still unstable, as evidenced by the recent hesitations about the state bonus for electric bikes (some €50 million for the national budget), the problems of Heetch, the ups and downs of Uber around the world. It continues to be seen by its actors and by local authorities as an occasional addition to "real" transport, i.e. the automobile and public transit.

During this time, urban planning departments continue to ensure that office building projects include the required number of parking spaces. Transport departments continue to fund the operation of everyday transport systems to the tune of €15 billion a year. Road departments continue to see reductions in road capacity as a weapon of mass dissuasion against private cars, but deliver the same traffic jams with solutions that are more innovative and easier to apply on roads down on the more restricted space of rails. The upward drift in the costs of building the Grand Paris Express (from €22 billion in 2011 to 35 billion today) seems to attract no comment. The shift to a single transport subscription tariff in Île-de-France seems to send users an attractive subliminal message: settle wherever you want, work wherever you want, there will always be a cheap, efficient, comfortable public transport system to take you from where you live to the places where you do your stuff. However, this is neither credible nor sustainable. Following the path of the old world leads to a cul-de-sac.

A new world is not a world where people all do their own thing, it is a world open to innovation, structured by rules and institutions, founded in shared visions of the future. It is by creating such conditions that the world of renewable energy has achieved its breakthrough. It is what is lacking with the new mobilities which, if well managed to reflect public objectives, would have the capacity to help us to accomplish the ecological transition, while at the same time overcoming the apparent contradictions that we face, for example between the imperative of transition and the demand for a more metropolitan and more inclusive way of life.

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