



# AFTER THE CAR

A case for public transport that works for all

## ABSTRACT

A vision for future public transport that values principles of social justice, distributive fairness, and environmental sustainability at a regional scale, in a developed country context.

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Cover Image

A trackless tram (n.d). Retrieved from <https://twitter.com/ChinaDaily/status/1377591586440146948/photo/1>

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## Introduction

Planning for future can be highly imaginative and rife with endless possibilities. Many such possibilities form the content matter of mobilities transition literature enlisting likely transport options in our imaginative futures. The debates around transitions, argues (Godet, 2002), involve a degree of dissatisfaction with the current dispensation. Such is the case with mobilities transitions as well. The diversity in perspective, from viewing ‘mobility as capital’ (Kaufmann et al., 2004) to advocacy for ‘immotility as resilience’ (Ferreira et al., 2017) reflects the breadth of the transition debates. The wicked problems (Sheller & Urry, 2016) associated with the current car-dominated regime (Cosgrove et al. 2009) of ‘automobility’ (Urry 2004) have socio-economic, environmental, and political implications for the human systems (Sheller, 2018). Resultantly, there have been calls for transitioning to a new mobilities paradigm (Sheller and Urry 2016) that addressees such problems. Banister, (2008) evokes such a future as ‘the sustainable mobilities paradigm’ and advocates ‘transport for all’ as the remedy (Banister, 2019). Similarly, Cervero et al., (2016) emphasize moving beyond a perspective that views mobility as inherently good while Bouton et al., (2015) and Fulton et al. (2017) rely on the potential of technology to remedy the socio-environmental problems of the current mobility systems. The range of such propositions continues to be expanded; however, it must be underscored, that most of these transitions, except technological solutions, envision a future of the transport which is ‘after the car’ (Dennis and Urry 2009). This manuscript argues for a mobilities transition that features socially just, technologically advanced, and environmentally sustainable public transport.

Setting or advocating a normative vision for future may be inseparable from one’s ideological moorings. The vision for transport future advocated here is underpinned by mobility justice ideas of Kaufmann et al., (2004), Martens, (2017) and Sheller, (2018). It is argued that the public transport systems equipped with Currie’s, (2018) ‘transit-fusion’ ideas and networked on Martens, (2017) ‘principles of justice’ are the future of metropolitan scale, land-based, transport systems in developed countries. Such a system might also accommodate active and publicly owned demand responsive transport media as the last mile connectivity option. This proposition does not consider sea and air-based travels and aims to cater to the future transport needs for the next fifty years only. It begins by establishing the need for such a transition by enlisting the socio-political and environmental problems with the current car dominated regime. It, then, considers and critiques some of the literature on mobility transitions that advocates technological fixes and low mobility scenarios. The argument for preferred transport future is, then, presented, and potential challenges to implementation are considered before concluding the paper. The paper concludes by proposing future avenues of research exploring enabling socio-cultural conditions that attract people away from the car.

## Why Alternatives?

The problems with the current regime of automobility are more than simple issues of social and environmental nature. The attribution of 25% of global greenhouse gas emissions (GHG) to

transport sector (Change, I.P.O.C 2014), 1.25 million annual transport related deaths in transport related accidents (Sheller & Urry, 2016) and billions of dollars lost in congestion annually (Bureau of Transport and Regional Economics 2007) are just symptoms of a wider malaise that Nixon (2011) calls “slow violence” of the fossil fuel capitalism. The impacts of automobility and its attendant system of highways in dividing communities (Jacobs 1961; Mitchard et al., 2011), deteriorating liveability (Vuchic 1991) and exacerbating health vulnerabilities (Dora and Philips 2000) are well recorded, however, these are not the only concerns. It provides unequal accessibility to the categories of gender (Wajcman 1991), race and class (Banister, 2018; Farmer, 2011). The differential accessibility afforded by the current mobility regimes have positive correlation with incidence of poverty (Kaufmann et al. 2004). Sheller, (2018) argues that such a system caters to the needs of a small minority of white, able-bodied, male, highly mobile ‘kinopolitical’ elite whose political powers are entrenched in governance and operational landscapes of resource extraction, energy production and military power etc. Such elite is kinetic, that is mobile, and wields immense political power, therefore, altering such a regime is difficult. She is sceptical that planners’ TOD (transit-oriented development) principles or technological solutions of the CASE (connected, autonomous, shared, electric) mobilities can deliver favourable outcomes unless wider kinopolitical culture is changed. However, mobility technologists do not share such pessimism.

## **What are the available options?**

There has been a considerable recent interest in technological solutions to our mobility problems. A case is made that CASE mobilities shall ease congestion by efficient trip chaining, lower GHG emissions through electric engines, and reduce traffic accidents via smart algorithms (Bouton et al., 2015). Fulton et al. (2017), for example, claim that 3R revolution of automation, electrification and ride sharing shall reduce 80% of GHG emissions and lower 75% of car accidents. Given the contemporary hype around smart mobilities, Currie (2018) argues for rigorous evaluation of such claims. He argues that CASE mobilities misrepresent car-share as ride-share and claims that car occupancy is on the decline. He is also sceptical of the success of fully autonomous vehicles (AVs) as an option for transport. However, even if such a scenario becomes a reality, a simple evaluation can be done by approximating the future need of cars consistent with current urbanization trends. Given that more than 50% of world population shall be urban by 2050 (Bouton et al., 2015), the number of travel trips by such population shall increase from the current annual 23 billion kilometres to 105 billion kilometres (Schafer & Victor, 2000). A simple mathematical calculation using current occupancy rate of one (Currie, 2018), means billions of cars for future population of 2050. On the similar lines, Mokhtarian (2018) claims that in a fully autonomous vehicle (AV) environment the car occupancy can fall below one as vehicles could be sent to do errands without a driver. He also claims that travel time saved through smart trip chaining of AVs shall induce more demand for travel. He, therefore, argues that such a scenario may not be helpful in easing congestion. In the same vein, Morozov (2014) quips that technological solutionism ignores the wider underlying problems at systemic level as it seeks to solve problems that do not exist. Lastly, but importantly, the precondition of a smartphone ownership for using such mobilities raises equity

issues consistent with current regime. Hence, this paper does not lay sole reliance on CASE mobilities though a limited use of such technologies, to be discussed later, is helpful.

The gravity of problems attached with automobility have led theorists to explore low mobility scenarios as well. Moriarty & Honnery (2008), Cervero et al., (2016), Ferreira et al., (2017) argue for exploring low mobility scenarios for future mobilities. Ferreira et al.'s (2017) proposition of 'immotility as resilience' is of particular interest, however. In a stark shift from Kaufmann et al. (2004) 'motility as capital' which views mobility as inherently good, Ferreira et al. propose 'immotility as resilience' thesis. Immotility, as against Kaufman et al.'s 'motility' advocates for privileging low mobility as inherently good. Citing Tainter's (1988) complexity theory, they argue that human systems have attained such a complexity that solving it through more technological solutions may result in its breakdown. They, therefore, propose a localism scenario in which accessibility is proximity-maintained as against the transport-maintained accessibility of globalism. Promoting resilience through such novel solutions seems fascinating but impractical. It is unclear how a world that thrives so much on connectivity (Sassen, 2001) can conceive development models without spatial mobility. Even if such scenario is theoretically feasible, it may not be so in near future for whose mobility needs this paper argues. The near future requires transport systems which benefit from technological advancements but do not leave the imperatives of inclusivity and equity behind. It is argued that only the public sector has the capacity and moral obligation to deliver such outcomes.

## **The case for public transport**

Public sector delivery of essential services such as transport is advocated on several counts. Firstly, there is a moral imperative underpinned by philosophies such as Sen's (1992) 'capabilities approach' that require a 'Keynesian' state to ensure wellbeing of its citizens. Secondly, there has been evidence that neoliberal planning could not deliver equitable outcomes when asked to do so (Gleeson, 2017), courtesy its inherent functional dynamics that privilege the already privileged. For example, Farmer (2011) reports how the city government preferred entering a public-private partnership to deliver fast track rail network in Chicago and exacerbated the accessibility disadvantage of racial communities to showcase the global city image of the city. Therefore, services as vital as transport, that are crucial to accessibility of key life opportunities (Kaufmann et al., 2004) must not be left to the private sector. Thirdly, given its penchant for privileging capital, the neoliberal governance of such services relegates citizens to the status of customers (Frug, 2017). Such a relegation has implications for the rights of the users of that service. Citizens have wide ranging rights which are protected by respective constitutional instruments (Frug, 2017) while board of directors of a private sector company cannot guarantee such rights. However, there are counter arguments against public transport services that target it for its inefficiency, crowdedness, and lack of dependability to which this paper turns now and proposes transport fusion as the preferable mode for catering to the mobility needs of citizenry by the Keynesian state.

## Transit fusion: the preferred way forward

The public transit future advocated here benefits from technology but adapts it to deliver efficient, just and sustainable outcomes. The theoretical underpinnings of our proposed transport future are provided by Currie's (2018) 'transit-fusion' (p.27) idea. Transit-fusion encompasses adaptation and fusion of transit vehicles, infrastructure, and service design of all better performing modes. Bus Rapid Transport (BRT) systems that use dedicated rail like tracks for buses and the trackless trams which are effectively trains on rubber tyres are examples of such fusion. The proposed transit infrastructure consists in a network of electrified metro rail systems, and trackless trams for medium to long distance travels within metropolitan region. The short distance or the last-mile travels is provided by walkable, cyclable realms of good amenity with options available for demand responsive shared services. Like CASE mobilities, metro rails and trackless trams benefit from automation and intelligent design for efficient trip chaining. Such a trip chaining might reduce congestion, deliver demand-responsive services while electrification of such vehicle shall reduce GHG emissions (Newman et al., 2019). Like much hyped ride-share services that provide vehicle share, the large capacity of trains, trackless trams offer prospects for true vehicle sharing (Currie, 2018) which is crucial for transportation needs of prospective large volumes of urban population. Such a future is not utopian. In fact, Vancouver, London, and Barcelona, along with several cities are already benefitting from electrified and automated trains (UITP 2011) and such uptake is on the rise (Currie 2018). Newman et al. (2019) are sanguine about trackless trams' potential to provide a cost effective and reliable alternative to car-based travel. Currie (2018, p.26) while reckoning such advancements claims that "Transit is far from marginalized by new technologies; it is liberated by them". However, the technology is not the sole panacea, and it is not necessary that what is technologically possible is also socially desirable (Sheller & Urry, 2016). Therefore, it is incumbent that such infrastructure is planned on the principles of justice.

Another argument for advocacy of public transit as the future is its capacity to deliver socially inclusive and equitable outcomes. It is argued that planning for such a system must be done based on (Martens, 2017) principles of justice. Premised on Rawls' (1991) idea of justice as fairness, Martens (2017) argues that 'everyone should have enough' accessibility (p.173). He attributes incidence of 'accessibility poverty' to lack of fairness in the transport system (p.175). The particularly striking idea is the need for measuring severity of accessibility disadvantage before planning for transport systems. The accessibility fairness index (AFI) he devised might be helpful in prioritizing routes, and points for connecting links to our advocated transport future. Planning for future transport must, therefore, involve identification of population groups with accessibility poverty below an accessibility threshold for the given area. After establishing the reasons behind such poverty, the top-down technocratic planning must meet the bottom-up participatory processes with public to fine tune the infrastructural and operational details of the proposed systems. Such a planning uses cost-effectiveness instead of cost-benefit analysis as an indicator of success or failure of the project (Martens, 2017). Such a valuation involves measuring progress against accessibility gains as against the monetization of the travel-time saved. Transport planning based

on these principles would deliver outcomes that might leave no one behind. Such a planning process is desirable, but it has its challenges.

## Can we get there?

Implementation of such a normative agenda is not without its caveats. It is not unusual for scenario envisioning exercises to consider linear progression of events. Godet (2002) argues that in envisioning futures we tend to overestimate the power of progress and underestimate the potential of inertia. As earlier argued, the physical components of our future transport, automated and electrified trains, and trackless trams, are very much a reality. However, the potential for such a proposition to change the Sheller's (2018) wider 'kinopolitical networks' (p.25) depends upon several factors which are not entirely under our control. The space for state led planning is already on the retreat and replacing corporate interests with public interests might not be an easy option (Campbell et al., 2014; Gleeson, 2017). What if the dominant oil interests in the current mobility regime are replaced by hegemonies of renewable energy firms or mining interests which provide batteries for transports of future? What if the placement of electric energy stations privilege few and disadvantage others? Such propositions are already being debated (Bouton et al., 2015). These considerations, along with the potential of the participatory processes, advocated by Martens (2017) as well, to enlist true representation of the cross-section of the community continues to be debated. Purcell (2009) argues that most of such spaces are sanctioned by neoliberal governance paradigm to address its legitimacy crisis and do not empower the participating public. Lastly, what if, despite appeal of the proposed transport system, people do not break their socio-cultural attachment to car? In sum, the proposed future is prone to several threats and uncertainties. However, planning is always in the name of uncertainty.

## Conclusion

In conclusion, the transport future argued here values principles of social justice, distributive fairness, and environmental sustainability. In the backdrop of socio-political and environmental problems of 'complex dominant system' (Sheller 2018, p.1) of automobility, the paper outlined its normative vision of the future of transport at regional scale in developed country context. The technological solutionism of CASE mobilities was critiqued for its inability to deliver on its promise of reduction in congestion and transporting large number of passengers. Similarly, localism, which encompasses proximity-maintained accessibility as against transport-maintained accessibility of globalism, failed to inspire interest for its utopian ideals. Such a low mobility localism requires strategic reorientation of the decades old march of civilization which seems impractical. In this backdrop, the paper premised public provision of transit services on Sen's (1992) capabilities approach. Benefitting from Currie's (2018) transit-fusion and Martens' (2017) principles of justice, it advocated for planning and provision of a network of automated and electrified metro trains along with technologically equipped trackless trams. It advocated planning for transport infrastructure on Martens (2017) principle of justice. The paper advocates caution for the proposed future's potential to alter wider socio-political associations of dominant business

interests and deliver unmitigated ideals. However, besides theorists' penchant for a move away from the car there is also a need for exploring socio-cultural conditions under which the public shall move away from its attachment with car based mobilities.

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