

1. Projects



Post-Car Ile-de-France

Finished research

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The issue of cars in the city is currently on the political, media and scientific agenda. Almost universally, mobility regulation policies tend to call into question the dominant position of the individual car in the functioning of urban life. But can we go further and imagine lifestyles that go completely beyond the individual car in a territory like the Paris' region? This hypothesis was explored by researchers at the Geography-Cities Laboratory (CNRS) for 2 years as part of the "Post-Car Île-de-France" project.

Research participants

- Arnaud Banos
- Sandrine Berroir
- Hadrien Commenges
- Jean Debie
- Juliette Maulat
- Student workshop in urban planning

The automobile is at the heart of a well-informed system of negative externalities that affects public health, harms the local and global environment, and takes up a significant portion of urban space. Despite these externalities and a downward trend, individual cars continue to dominate passenger travel in France, where they accounted for 83% of trips in 2010 ¹. Île-de-France, with its repeated pollution peaks and traffic jams, offers a particularly interesting case for thinking about getting rid of cars. This region has both a dense agglomeration, where car use is decreasing, and peripheral spaces (rural spaces and secondary cities), less equipped with alternative transport, where car use continues to grow ². The Mobile Lives Forum wanted to explore the possibilities of achieving a car-free Île-de-France, following two more or less radical hypotheses:

- The hypothesis of a transition to lifestyles that are less dependent on the individual use of cars was explored by researchers from the Geography-Cities laboratory and the CNRS in the context of the Post-Car Île-de-France project.
- The hypothesis of a succession of disasters resulting in an end to the Anthropocene ³ and a break with our current ways of life was applied to Île-de-France by the Momentum Institute in the Bioregions Île-de-France project.

A complementary section has been added on the question of the resilience of Île-de-France in the event of a crisis:

- The survey “Resiliences, Evacuations, Representations” aims to consider the representations and mobility of Francilians (the inhabitants of Île-de-France) in times of crisis, as well as their needs during the collapse or malfunction of certain functions of the city. The survey was conducted by researchers from the University of Cergy-Pontoise, the University of Paris Panthéon-Sorbonne and ESSEC.

To carry out the Post-Car project, the Geography-Cities laboratory put together a multidisciplinary team with expertise in urban planning (Jean Debrie, Juliette Maulat), urban geography (Sandrine Berroir) and geography modelling (Arnaud Banos, Hadrien Commenges). During the project, researchers were joined by the students of the professionalization workshops of the master’s in Planning-Urbanism (Paris Panthéon-Sorbonne) and Carthagéo (Paris Panthéon-Sorbonne, Paris Diderot, ENSG ⁴). Based on the observation that in Île-de-France, cars hold both a dominant and problematic place, it was a question of exploring a transition to lifestyles less dependent on the individual use of cars and that would meet the Francilians’ aspirations for the future. In order to do this, the research has in three major phases:

- The first phase reviews current scholarship, followed by a diagnosis of the mobility habits in Île-de-France that is then supplemented by a deeper qualitative evaluation of Francilians’ aspirations for mobility on the basis of the international survey conducted by the Mobile Lives Forum in 2015 (see detailed survey results here).
- The second phase models current mobility habits at the regional level (“macro model”), which led to the designing of a serious game. This game served as the basis for a participatory forecasting experiment carried out with the region’s inhabitants (“game model”).
- The third phase concerns an analysis of urban mobility regulation policies in relation to the challenge of reducing the harmful effects associated with the automotive system (the “toolbox”). It is based on a comparative analysis of the communication, planning and forecasting documents of five metropolitan configurations (Geneva, Buenos Aires, Los Angeles, Oslo, Amsterdam), supplemented by a field survey in Brussels and Paris. The aim is to identify the evolution of public actors’ frames of reference, tools and regulatory mechanisms.

A final synthesis of the study’s results shows whether or not it is possible for Île-de-France to manage without cars. The elaborated models, which are available in opensource, can be used freely.

Key results

- Île-de-France appears to be, at first glance, a favorable context to function without the use of individual cars:

o This region of France has the lowest number of cars per household: 1.1 vehicles per household compared to 1.5 nationally.

o Strong potential to develop and optimize shared car use in Île-de-France: one third of all the cars in the region aren't used during one weekday; cars are parked on average 23 hours a day; each car has on average only 1.01 occupants for commuting and only 1.28 for all other trips combined.

o High potential for modal shift to other modes: 55% of trips are less than 3 km long and could be done by bicycle or on foot if suitable infrastructure was developed; 40% of car trips last less than 15 minutes.

- But there are large disparities between the center of Paris and its periphery: more than 50% of residents in the outer suburbs travel exclusively by car, compared to 9% in Paris. Thus, the further away from Paris we get, the greater the dependence on cars.
- According to the Mobile Lives Forum's survey, there is a shared desire by Franciliens to lead slower paced, more localized lives with improved accessibility conditions.
- The study of public policies shows that there is talk of a necessary transition, without any questioning of the growth of mobility and without any real coercive policy aimed at curbing the competitive advantage of cars.
- In the end, the research shows that it is impossible to do without abandon the individual car in Île-de-France without fully rethinking its organization and urban planning.

The results of the research

1. The true weight of the automobile

Despite some recent signs showing a real decrease in car use, Île-de-France remains a region structured by cars. The observation of mobility dynamics in Île-de-France reveals a gradient from center -to -periphery (city center, inner suburbs, outer suburbs) in its relationship to cars. Daily travelled distances increase the further a person's home is from the center of Paris: 12 km traveled per day by Parisians, 17 km per day for inhabitants of the inner suburbs and 30 km per day in the outer suburbs. As regards the periphery, it should be noted, nonetheless, that these are highly diverse areas that show variations in car dependence, as confirmed by all indicators (car ownership, multi-motorization, car flow, travel share, daily distance...). The modelling (macro model) highlights the poor level of accessibility in these outer suburbs (except for certain points on the rail network) which is partially compensated by the use of cars. The model measures this distinction between the hierarchical and centripetal nature of the public transit system and the capacity for diffusion allowed by car use. The analysis of Franciliens' habits and aspirations in terms of mobility reveals an increasing complexity in the spatial organization of movements with activities being aggregated one after the other (home,

work, shopping, leisure). This organization structures territories in which inhabitants are car-dependent for trips which are often short distance. What's more, 70% of trips are from suburb to suburb, rendering a post-car future even harder to foresee.

2. Aspirations for change

Car dependence is therefore indisputable. However, lifestyle, mobility habits and aspirations demonstrate the value of exploring this hypothesis of reducing car use. From the standpoint of people's habits, it is important to remember that the average range of car trips remains low. If using cars allows people in low density areas to bridge longer distances with faster travel, and while there may be no alternative for certain flows, the majority of trips are short-range, short-term and could be performed with active modes (half of car trips are less than 3 km). This familiar aspect of car use justifies this new attention to active modes.

From the point of view of aspirations, the surveys don't identify a real desire for a strong reduction in car use, but they do attest to a growing recognition of the negative externalities associated with the system of automobility. And while there is little doubt that people are attached to the perceived benefits of having a car (autonomy, frequency, destinations), this survey of aspirations also reveals shared desires to lead slower paced, more localized lives with improved accessibility conditions. While these aspirations are diverse and depend on each individual's profile, locations and current habits, there is clear evidence of an aspiration to slow down and spend less time travelling around.

While this has been observed everywhere (6 countries and 12,000 respondents in the Aspirations survey of the Mobile Lives Forum), the peculiarity of Île-de-France in these surveys lies in an ideal that is expressed by a strong desire to achieve slower lifestyles by improving accessibility for all (the development of public transit) in conjunction with new and more localized dynamics. The micro device (model-game) deepened this reflection on changes in mobility. By inviting respondents to design a car-free region (post-car mission 2030), the game fostered a thought process around accessibility/proximity and its consequences on the shape and composition of the city. It would of course be worth increasing the number of game sessions, but those conducted in educational settings (students), academic settings (researchers) and among the general public show the possibility of discussing a drastic change in mobility (a city without cars) and debating the various choices involved in this change (localised city, linear city, compact city, low-density city). These game sessions then allow for a debate on the choice of density (compact city vs. sustainable diffuse), the mix of urban functions and their polarizations (urban centre vs. multi-center), the place of green spaces in these choices (post-car villagers vs urban structuring around a central green space) and the role of public and active transport in this organization.

3. The scenarios of a car-free territory

The research on Francilians' aspirations allows us to uncover the different characteristics of an intermodal city. Although taking into account these aspirations doesn't enable us to redesign a completely car-free city, it does allow the conception of a non-coercive reduction in individual motorized mobility. The result is the identification of an incentive package with three main dimensions (development of public transport, new uses of the car, development of relay car parks), supplemented by a set of measures (collective rural

services, soft modes, shuttles, on-demand transport), supported by financial incentives and accompanied by new opportunities offered by the evolution of information systems (applications).

This scenario includes the diversity of individual habits and aspirations, revealing the specific geography of this intermodal city based on the necessary differentiation of the evolutions espousing the graduation of urban densities. The central-periphery dynamic of car dependence is then reflected in this script by a dissociation of the measures in the central zone (a city without cars) and those in the peripheral areas (an intermodal city). The game sessions extend the exercise by allowing discussions on the composition of a local, car-free territory. The different city models created in these sessions thus offer a complementary and collective expression of this post-car thought experiment.

The comparative analysis of urban mobility regulation policies offers a second reading of this script. It is important to note the congruence between the two scenarios. Despite variations related to local contexts, the analysis of public policies (development of public transport, promotion of soft modes, regulating cars, coherence between urban planning and transport) ultimately reveals a desire shared by decision-makers to reduce the negative externalities associated with mobility, but without the goal of reducing mobility itself. Mostly based on incentives, mobility regulation policies are mainly designed to develop public transport and active modes, as well as to push for the decarbonisation of vehicles. Nevertheless, there appears to be an evident lack of strategy and even reflection on the possibility of reducing people's movements. Again, the result is the construction of a new intermodal equation that offers the script of a transition that, if implemented, could signal a new (and therefore intermodal) era in the city-mobility relationship.

But it is the similarity of the two readings (the one involving aspirations, the other involving public policies) that seems noteworthy, probably confirming a partial change in the cognitive frameworks on the relationship to cars. This change is then structured around a generalization of how the automobile problem (negative externalities) and the response to it (an incentivized intermodal equation) are taken into account. The scripting of these changes results in a duality between a significant change in car use in the central zone and uses structured around individual mobility in the peripheral zone. Above all, it raises the question - widely debated in recent social movements - of how "vulnerable" a significant part of the population is to these new automobile regulations. The geography of automobile dependence challenges these prospective scenarios.

4. How close is the goal of a car-free Île-de-France

The mobilization of the macro model reveals the resistance of Île-de-France to the reduction of individual car mobility. The Aspirations Survey demonstrates an attachment to the perceived benefits of cars in the context of lifestyles structured around complex mobility patterns. And the "toolkit" of public policy points indeed to a vision of transition, but one that lacks any questioning of the growth of mobility and without any real coercive policy aimed at curbing the competitive advantage of cars. While the micro device can be used to debate, script and evaluate the profound change in mobility habits and associated urban models in a car-free configuration, the macro model shows how far we are from achieving it in the current territorial composition. This reality of the weight of cars in Île-de-France thus shows that it is impossible to do without cars in this region.

The experiments allowed by the model (location of jobs and housing, variation of means of transport...) and especially the tests on typical configurations identified in the literature (CBD, TOD, compact city...) enable us to grasp how far we are from the goal of a drastic reduction of cars in a territory marked by these gradients of accessibility, by these imbalances between job pools and labour pools and by the importance of the major poles in the structuring of Île-de-France. And it is important to remember here that our committed stance in this research is to perform a quantitative and qualitative exploration of Francilians' daily mobility and to consider the fact that other forms of mobility (tourism and logistical) would increase how far we are from the goal of a significant reduction in road mobility.

However, the aspirations for slowing down, for greater accessibility and proximity, as well as the gradual congruence between the objectives of public policy and the collective perception of the problem posed by the system of automobility point to a partial but real questioning of cars and therefore to a process of transition towards new systems of mobility. The research aimed to provide key readings of this transition. In the end, it asks another open question about the relevance of this intermodal transition to future social and environmental issues. It can and should be accompanied by other reflections (not developed in this research) on scenarios that conceptualize breakthrough transitions and a full rethinking of the metropolitan system. For instance, the work carried out by the Momentum Institute within the Mobile Lives Forum on the scenario of a post-collapse Île-de-France offers another more radical reading of this post-car situation and invites us to discuss this tension between transition and collapse.

Online resources and synthesis

Tool for modeling flows in Île-de-France (in French only, open source)

Dispositif Macro. Modéliser la mobilité urbaine en Île-de-France (un modèle agrégé) Commenges Hadrien, Janin Oscar (2019) Améginat-IF : aménager en imaginant l'Île-de-France, UMR 8504 Géographie-cités. <https://analytics.huma-num.fr/geographie-cites/ameginatif/>

DOI : <https://zenodo.org/badge/latestdoi/120883410>

Dispositif Micro. Simuler un territoire sans voiture (un modèle multi-agents) Banos Arnaud (2019) Post Car Micro Model, UMR 8504 Géographie-cités

DOI : <https://doi.org/10.5281/zenodo.3463120>

Serious game (in French only)

- [Download the presentation of the game](#)
- [Download the report on the outcome of the games played](#)
- To learn more about the game, contact: contact@quartiersludiques.com

Synthesis (in French only)

- [Download the final report](#)
- [Download the interim report on the analysis of mobility in Île-de-France](#)

- [Download the presentation, the methodology and the transcriptions of the interviews](#)

Survey on the desire to leave Ile-de-France

- [Survey on the desire to leave Ile-de-France](#)

Video

- [Watch the video of the Post-Car project](#)

Notes

1 OMNIL, 2015, enquête globale transport 2010.

2 OMNIL, 2015, enquête globale transport 2010.

3 Neologism created by geochemist Paul Crutzen (2000) based on the observation that over the last 200 years, human activity has caused the earth's ecosystems to change rapidly. From this point of view, human activity is considered having a significant impact on the environment, and propelling earth into a new geological era: the Anthropocene.

4 National School of Geographic Sciences.

Mobility

For the Mobile Lives Forum, mobility is understood as the process of how individuals travel across distances in order to deploy through time and space the activities that make up their lifestyles. These travel practices are embedded in socio-technical systems, produced by transport and communication industries and techniques, and by normative discourses on these practices, with considerable social, environmental and spatial impacts.

[En savoir plus](#) x

Lifestyle

A lifestyle is a composition of daily activities and experiences that give sense and meaning to the life of a person or a group in time and space.

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Mobilization

Mobilization is the action by which individuals are called upon to gather in the public space for a concerted effort, be it to express or defend a common cause or to participate in an event. In this respect, it is a social phenomenon appertaining to mobility. This article has been written by Sylvie Landriève, Dominic Villeneuve, Vincent Kaufmann and Christophe Gay.

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Lifestyles

- [Cars / motorcycles](#)
- [Aspirations](#)
- [Futures](#)
- [Proximity](#)

Policies

- [Cars](#)
- [Paris and Île-de-France](#)
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1 <https://en.forumviesmobiles.org/project/2017/02/28/bioregion-ile-france-2050-3525>

2 <https://en.forumviesmobiles.org/project/2018/04/18/survey-desire-leave-ile-france-12409>

3 <https://vimeo.com/366453642>

4 <http://creativecommons.org/licenses/by-nc-sa/3.0/fr/>

5 <http://forumviesmobiles.org>

6 <http://creativecommons.org/licenses/by-nc-sa/3.0/fr/>

7 http://fr.fvm.localhost/modal_forms/nojs/contact