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### **Facing the environmental transition: the critical issue of grasping mobile spatialities at the crossroads of (un)changing practices and policies**

Jean-Baptiste Frétigny and Juliette Maulat

#### Abstract

Increasing attention is being paid by scholars in the field of mobility studies and beyond to environmental challenges, in the context of worsening environmental crises and political injunctions to environmental transitions in mobilities. In this chapter, by undertaking an analysis of both English-speaking and French-speaking literature, we show the salience of transgressing the dominant segmentation of mobilities, between studies focusing on practices and those investigating policies, in order to better understand the assemblage of (un)changing spatialities at stake. This critical investigation of what such the environmental transition of mobilities is supposed to entail shows the various ways through which the conceptual tensions between the multi-level perspective and social-practice theory can be used to deconstruct further existing ways of thinking about mobilities and point out key topics on which more academic investigation and public action are urgently needed.

#### Introduction

In 2019, the World Bank published a report with strategic ambitions, entitled *Global Roadmap of Action: Toward Sustainable Mobility*.<sup>1</sup> A few months earlier, António Guterres, Secretary General of the United Nations, praised the merits of the 'transition to e-mobility [...] clearly alive with opportunity' (UN 2018). The OECD (2019) also devoted a report to this, while reaffirming its call for a 'transition to shared mobility' (ITF-OECD 2017). At the European level, in 2016, the EU Commission (2016, p. 2) set out a 'European strategy for low-emission mobility' that aims to 'enable Europe to make its transition [...] towards the low-carbon circular economy'. Given the context of heightened environmental concerns at different levels, we can clearly see the extent to which the terms transition and mobility are now linked in the discourse of public actors.

Such directives for the environmental transition of mobilities, on the world stage and elsewhere, raise three critical issues. They mark out the challenge of environmental crises and in particular the climate emergency, calling on the capacity of actors in society as well as social-science researchers to rise to the challenge (Anable 2019). These directives also raise the question of how social sciences look at public policies implemented (or not) in the name of the transition and their effects. Finally, they question the way these issues are being addressed in academia, and how such work should be renewed. Rather than restricting the issue of mobility transition to research specifically

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<sup>1</sup> This research is part of two larger projects that have been co-financed and scientifically followed by the Mobile Lives Forum as part of its research program on the mobility transition. The Mobile Lives Forum is a research and prospective institute created by SNCF.

claiming to focus on it, we propose to look at the broader body of work relating to changes in practices and policies concerning mobilities, which tend to be obscured by the attention paid to the term transition.

So, how can we think of mobilities as fully fledged spatialities that proceed from a dynamic assemblage of practices and policies? We believe that research would benefit greatly by deepening this hybrid subject of study, whereas most studies adopt a restricted view by focusing either on practices or on policies. This chapter begins with an investigation of both the English-speaking and French-speaking literature since the beginning of the 2000s, when mobility studies started to engage with both an environmental and a policy turn. Here we highlight the magnitude of this persistent segmentation and suggest capturing the mobile spatialities that occur at the junction of practices and public action.

The idea of a disconnect between practices and policies may seem surprising, in view of the theoretical intentions that flow from the field of mobilities: thinking of mobilities in a systemic, encompassing and relational manner—brought into play by all of the above—extends and accompanies this shift. It is hard to pursue such an ambition fully in this field, as indeed in the broader field of social sciences focusing on movement, including the field of transport. The difficult transgression of the separation between practices and policies studies echoes the persistent division of knowledge between social studies at a detailed level, of individuals rather than groups, particularly in the field of mobility studies, and other studies at a macroscopic level (Manderscheid 2014), often of transport and infrastructure. An environmental approach seems particularly interesting to us in reinforcing the cross-cutting and hybrid understanding needed in studying mobilities. Interdependencies, playing off usual research borders, are indeed at the very heart of the environmental analysis. Finally, an approach based on spatialities, understood as the set of actions deployed in and by space, in terms of practices and policies, also seems promising to us in such social-science research.

The first part of this chapter questions the dominant approaches to environmental transition, especially concerning mobility, in order to show the importance of going beyond their technological prism. But it also goes beyond the oppositions between multi-level perspective and practice theories, by addressing the (dis)continuities of actions undertaken by the different actors. The following sections examine the contributions of research devoted to factors (un)blocking the transition in terms of practices and then policies, calling for linkages between these theories and between the policies and practices of mobile spatialities. Finally, the concluding section points to four research avenues that transgress the opposition between practices and policies to meet the challenges of the transition.

I. A critical questioning of the environmental transitions of mobilities: the technological prism or the forgetting of practices

The category of transition is far from being unambiguous, and actually shows itself to be highly forward-looking and political. It is the subject of intense work in the social sciences. The transition is both described as an inevitable process, due to the finiteness of environmental resources, and as a 'collectively-desirable path of progress' (Grandjean & Le Teno 2015). One can grasp the oscillating meanings of the transition, hesitating between its analytical and normative scopes. Here, we define transition as a category of both the social world and ecological thinking, which designates the shift of societies toward significantly less-intensive use of environmental resources. The issue at stake then resides in the implementation and in the control by the actors of this shift and its consequences, on

various social, temporal, and spatial scales. These forms of transition are mainly viewed through a technological prism, raising the question of technology's place.

Dominant theories of transition: a plea for an urgent socio-technical change

The main scientific field working on this category is the interdisciplinary research on sustainability transitions, also identified as the field of socio-technical transitions, which has developed since the early 2000s in the Netherlands, the United Kingdom, and Germany (Audet 2015). Transition is defined analytically as a set of changes from one socio-technical regime to another. Such regimes are dominant and relatively stable systems. They are constructed by integrating incremental innovations. As transition concerns assert themselves in the political agendas of European countries, authors in this field have been preoccupied with the urgency of socio-technical change and the operational scope of their work. They examine the modalities of public action in terms of transition, in particular through the notion of transition management, which evokes the idea of control and guidance.

The theoretical arsenal deployed for thinking about the transition draws on multi-level perspective (MLP) innovation (Geels 2010). It has had real success, including being compatible with other theories. The multi-level perspective addresses three levels that are both hierarchical and interdependent: niches, regimes, and landscapes. The niches are protected innovation sites that exist on a fairly modest scale, such as research centers, subsidized pilot projects, or specialized niche markets. The innovation practiced on such sites is more or less out of step with socio-technical regimes, for instance depending on whether walking buses or electric cars are being developed. These innovations can then be integrated into existing regimes or contribute to their replacement. For their part, regimes are composed of technologies, regulations, institutions, uses, actors, infrastructures, and discourses that frame people's actions. Regimes are embedded in a landscape, made up especially at the national level, which corresponds to a more-inclusive assemblage of political ideologies, values, beliefs, and macroeconomic developments. The interdependence of niches, regimes, and landscapes may lead to different forms of (non-)transitions, depending on the situation and the pressures exerted between levels.

This perspective has the advantage of providing a relatively flexible, interpretative framework at the theoretical level, which is immediately all-encompassing. It turns out to be favorable to large-scale analyses, particularly from an institutional point of view, with regard to the relationships between institutions and with infrastructures, different forms of innovation, standards, values or macroeconomic rationales. The theory can thus account for an important part of the more or less radical or incremental nature of change, including the inertia linked to the dominant systems, especially path dependencies, i.e., previous decisions and their persistence, in particular to the central role given to cars as far as mobilities are concerned.

Transport and mobility studies facing the transition

Mobilities are certainly addressed from the multi-level perspective, as evidenced by a key player in the movement, F. Geels (et al. 2012), co-editing a book on automobility. This interest favors exchanges with the field of mobility studies, as the latter takes environmental issues and public action into account more. This is borne out by the latest works of J. Urry (2011, 2013) and the new journal *Applied Mobilities*, whose first editorial was entitled: 'Applied Mobilities, Transitions and Opportunities'. In many ways, these exchanges have been established via transport studies on issues of sustainable mobility and low-carbon emissions (Nunen et al. 2011, Geerlings et al. 2012).

In these works of transport studies, however, the term mobility is rarely used to refer to theoretical approaches in the field of mobility studies. The transition is mainly looked at by modeling or through quantitative approaches stemming from the socio-economics of transport, econometrics, political economy, and even engineering. The works do plead for a broader investigation of transition issues beyond technological innovations. However, the mobile actions of individuals remain captured from the outside by a behaviorist analysis. This prism contrasts with the comprehensive approaches widely used in mobility studies, focusing on the point of view of actors by studying their practices, representations, and sensitive experiences.

However, collective volumes like *Moving towards Low-carbon Mobility* (Givoni & Banister 2013) and *Low-carbon Mobility Transitions* (Hopkins & Higham 2016) show increased interest in mobilities issues. The authors argue for a systemic approach, while reducing demand and avoiding certain types of mobilities that are explicitly addressed in the latter volume. But the multi-level perspective nonetheless focuses particularly on transport systems (automobile, rail, etc.) (Geels 2018), which can be named travel regimes. If we focus on these regimes alone, we pass over the role of mobilities in the deployment of spatialities more generally, and so we miss the interactions of these travel regimes with the many other spheres at play in social, family, or professional life, found in the lifestyles of individuals and groups: work, education, leisure, care, planning, etc.

The very exclusive framing of the transition in terms of technological innovation, along with the underplaying of power relations and spatial justice, have been criticized in the field of mobility studies (Tyfield 2014; Sheller 2015; Temenos et al. 2017). They participate in a broader critical examination of the field on sustainability transitions and beyond, which points to the perverse effects of the domination of technological and depoliticizing approaches in research on transport and public decision-making (Schwanen 2013). This domination invisibilizes the crucial issue of actors' practices and their dynamics. Social-practice theory underlines how much the success of policies is conditional on the effective change in practices, and therefore on a much broader consideration of what practices entail (Shove & Walker 2010): know-how, representations and materiality (objects, infrastructures) and a close dependence on other practices, therefore engaging a considerable part of mobile spatialities as a whole.

The interest in connecting these two approaches of multi-level perspective and practice theories has been emphasized by various researchers (Schwanen 2013; Caletrío et al. 2015). Both theories share the emphasis they put on the interdependencies at work in the societies studied. Whether approached as systemic interactions, especially socio-technical, or as co-dependencies of practices, these interrelationships are key for addressing the processes of change and the possibilities of transition. Mutual adjustments, forms of alignment, synchronization or, on the contrary, discordance are in both cases major elements of the analysis, which link the various mobile spatialities through practices and policies. This is why we focus on them in the investigation of possible junctions between research on practices and on policies.

## II. The dynamics of emerging and resisting mobility practices

The analysis of mobility practices is largely centered on the relationship to cars. The socially dominant character of this relationship, referred to as automobility in the anglophone works and automobile dependency in francophone research, involves major forms of alignment among actors. The examination of a modal shift (or lack thereof), a key theme in the literature on transport and mobility, is largely concerned with single-person car use and potential alternatives, qualified as alter-mobilities (Vincent-Geslin 2010; McLaren 2016). The study of the literature suggests three key

factors in the resistance of single-person car-use practices and the opposing crystallization of alternative practices.<sup>2</sup>

The resources available for the deployment of spatialities play a major role in the (non-)use of alter-mobilities: capital endowment (be it social, cultural, economic, or symbolic), know-how, the relative location of activities (places of residence and work included), transport offerings and accessibility, job characteristics, the organization of relationships with family and friends, etc. The social network of individuals is thus integral to these resources: carpooling, for example, is greatly facilitated when it takes place within networks of mutual acquaintances (Pradel et al. 2015). The co-dependence of practices stands out here in understanding (non-)changes in mobilities. It can be opposed to the theories of 'rational modal choice', which assume that individuals arbitrate between particular modes of travel from a utilitarian perspective and thus lack the situated, relational, and contextual nature in which practices actually take place. Resituating the analysis of mobile practices within collective agendas highlights the richness of the spatialities in which they are involved, and their organizational logic. For example, parental mobility appears so strongly dependent on children's spatialities in central France's urban fringes, that the travel mode depends less on the number of children in the household than on the dispersion in time and space of their activities (Oppenchain et al. 2017). This is shown by the detailed coordination of (im)mobility practices of household members. The decisive role of these resources is understood especially when they change, following time triggers, events, and especially life-cycle-induced moves or family breakups (Meissonnier 2015), all of which can lead to alternative practices. The unavailability of usual travel modes is also likely to initiate changes in mobile practices: economic crises, major sporting or political events, fuel-supply problems, strikes, environmental phenomena (Chatterton et al. 2015) or even health crises, such as Covid-19.

Mobile cultures and the social norms they convey are another major factor of (non-) change and the synchronization of practices. They point to the socially situated nature of practices. The wealthier segments of Finland's population, for example, seek to live and move about in line with their financial means. Even if the car is only used for leisure mobility, 'the normal thing to do' in terms of consumption is to opt for one, for example, selected independently of ecological criteria and in line with the adage, 'if you buy cheap, you pay dearly' (Aro 2016). In absolute contrast, the distinctive use of bicycles in Bangalore by the middle classes has reversed the social value conferred on bicycles, which were previously associated with the working classes (Anantharaman 2017).

Recurring collective representations tend to reproduce mobile cultures and dominant practices, from advertising—in which car ownership is self-evident (Joshi et al. 2016)—to 'structural stories' (Freudental-Pedersen 2009). Structural stories are all forms of beliefs that are presented as universal truths. In justifying their mobile practices, respondents to a study in Denmark for instance argued that 'when one has children, one needs a car', or 'one cannot rely on trains, as they are always delayed' (Freudental-Pedersen 2009, p. 34). From a multi-level perspective, by shaping practices, collective representations participate in the regimes in place, in particular that of automobility. But they are also part of the landscape, raising the question of its evolution. We consider it as a major issue at stake in research on relationships to cars. Such work often highlights a shift from 'passionate to functional' car-related practices, particularly for young people, who are less likely to apply for a driving license (Vincent-Geslin et al. 2017, Delbosc 2016). The question remains as to whether these beginnings of a decoupling between the use and possession of cars is about the

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2 A key inspiration for this typology is the work of Oppenchain, Fouquet & Pourtau (2017) .

landscape changing as a whole (i.e., engaging with a combination of practical alternatives to single-person car use) or is rather about a mutation of one part only of the landscape and therefore an illustration of its growing heterogeneity.

The shift from a 'passionate to functional' relationship with cars touches on the role of the sensitive, of desire, but also on routines and habits. These constitute a third factor of (non-)change in mobility practices. In the literature, repertoires of affect and emotions do not yet receive all the attention they require. But studies show the persistent attraction of driving (Kent 2015) and suggest a less monolithic and more discontinuous landscape than the multi-level perspective has considered. Feelings and emotions are fully involved in the more-studied field of routines and habits, which have been identified as powerful and ambivalent drivers of practices. At stake are both resistances to change as well as possible evolutions, the latter being often built step by step, reversibly, their durability depending on resources available (Schwanen et al. 2012; Pradel et al. 2015). The changes in practices that are most likely to be initiated seem to be those that cause inflections rather than breaks in the daily assemblage of spatialities. Car-sharing appears as an effective change of practice, undermining single-person car use, because of its ability to interlock with other existing practices (Kent & Dowling 2013). More generally, the acceptability of a modal shift seems indeed to depend on its relationship with such assemblages, for instance regarding the practices that can be engaged on the move, such as maintaining social relationships by car-sharing or carrying out various activities in public transport. Research suggests that developing local-resource sites (places of leisure, education, etc.) or increasing the flexibility of public transport (routes, timetables) has more influence on the mobilities of residents on the urban fringes of Paris than introducing demand-responsive transport or incentives to change their place of residence or employment (Le Néchet et al. 2016). Following the relational approach that social-practice theory takes, the challenge is to conceive the relevance of change in relation to the bundle of interdependent practices in which every mobility participates.

Research into mobile practices calls for more conceptual tension with the multi-level perspective, be it regarding the unquestioned monolithism of its landscape or the lack of importance given in this theory to social connections with friends, family, and beyond. Analyzing the studies on (non-)changing mobile practices makes it possible to grasp how much they challenge the field of politics. The (non-)alignment of practices with automobility is played out indeed through the available resources (raising the issue of the social and spatial redistribution of mobile cultures, which public action tend to shape) as well as through the registers of the sensitive, with which public action should deal more. A closer examination of existing work on policies provides more clarity on the matter.

### III. The environmental disjunction of policies: displaying rather than implementing a transition

The analysis of the literature highlights the extent of the disconnect between the formulation of environmental objectives and actions taken. Public policies linked to mobilities, in the name of environmental concerns, are marked by long-term changes in the normative and interpretative frameworks mobilized in public action. Contributing to the continuity of policies, we can consider that such paradigms participate in regimes as well as in the landscape. At issue is a shift from the supply of car traffic to the promotion of collective transport, and even to the regulation of travel demand, with transport and mobility policies including environmental goals, at the national and local levels (Pflieger et al. 2009). While their displayed novelty is sometimes very relative, an arsenal of tools and policy instruments participate in this shift as concerns the diversification of supply of alter-mobilities, the regulation of space given to cars (speed, parking facilities, and pricing), or the

integration of land-use and transport planning (Gallez & Kaufmann 2010; Docherty et al. 2018). The circulation of models and tools, due to public and private actors, has led to a certain standardization of these policies, despite variations from place to place (Mercier et al. 2016; Reigner 2016).

The policies seem particularly effective when they are located precisely at the intersection of practices: the implementation of car-free days, programs for experimenting with alternative mobilities or educational and health actions (Rocci 2015; Joshi et al. 2016; Cass & Faulconbridge 2017). Nevertheless, they are rare among the actions implemented, and contrasting with the prevalence of communication campaigns encouraging everyone to change what is presented as an individual choice. Criticized for their reductionist nature and their normative pressures, such campaigns tend to present as self-evident the disengagement of public authorities from accessibility issues (Reigner et al. 2013; Nikolaeva et al. 2019). In some respects, elected officials seem aware of the ambiguities of these campaigns, as shown in the interviews conducted by G. Marsden et al. (2014) with policymakers in Scotland and England. Maintaining such actions could be due, on the one hand, to the political effectiveness of a discourse by elected officials supporting individual initiatives, and on the other hand, to the weight of the growth paradigm, as these officials fear that changes in practices would be economically damaging.

The extension of mobility policies beyond transport is connected to planning. Planning is indeed often cited as a major lever for changing mobilities, with the dissemination of urban models such as compact cities or transit-oriented development (TOD). TOD promotes, for urban projects, the combination of density, mixed-use planning, and an urban design favorable to pedestrian mobility near to public-transport locations (Calthorpe 1993). While the objectives of these policies participate fully in an environmental transition of mobilities, including making the envisaged changes desirable, various authors have emphasized the importance of not fetishizing these models. They stress implementation difficulties, due to the lack of alignment of the actions carried out: policies are still largely sectoral and market forces make the fight against urban sprawl much more difficult than expected (Tan et al. 2014; Gallez et al. 2015).

A more general stumbling block to implementing these objectives is the persistent alignment of actors on the growth paradigm, i.e., the research of economic growth through the increase in transport supply, mobilities, and their speed (Givoni & Banister 2013; Buhnik 2015). Such actions are backed by an urban policy agenda that overshadows the goals of regulating travel demand and providing access to urban resources, and therefore the issue of mobile spatialities as a whole. Converting areas into pedestrian districts is emblematic of such ambiguity. Restricting car traffic appears more as a means of achieving attractiveness and urban-renewal objectives, conceived on the scale of a few streets, rather than as an environmental end, on the scale of entire cities (Brenac et al. 2013). These policies illustrate the logic of ecological modernization and of eco-efficiency (Gendron 2015 & Hall 2016), which, from a multi-level perspective, are more about rationalizing the environmental performance of mobilities, and taking on the appearance of a transition, rather than bringing about significant change in existing socio-technical regimes.

This entrepreneurial agenda contributes to the rise of public-private partnerships and to the spatial and social selectivity of mobility services provided (Cresswell & Adey et al. 2016), such as bicycle sharing systems, restricted to the centers of the largest cities (Huré 2016). This selectivity contributes to a broader and ambiguous dynamics of dualization in policies, where the restricted space given to cars in city centers contrasts with the facilitation of car traffic in peripheries (Reigner et al. 2013). Though often cited as a model of transition, Copenhagen has such a dual spatial system

of regimes, introduced in the 1990s. The motorization of peripheries is at odds with the growth of public transport and cycling in the center (Pineda & Vogel 2014).

The non-coordination between actors limits the scope of the actions undertaken. Power relationships between public authorities at different levels and endowed with varied competencies make it hard to shift policies. In France, for example, inter-municipal authorities (the *intercommunalités*) are endowed with powers covering public transport. But they have little or no say in the area of road infrastructures, and they are therefore deprived of a major regulatory lever. Another gap appears between the innovations of certain local actors, in particular citizens' initiatives, and the decisions of national public actors with important competences, such as in the opposition between Wellington and the New Zealand government until 2017 (Cresswell & Adey et al. 2016).

In addition, policies tend to be accompanied by mixed environmental consequences, perverse effects or rebound effects, especially when they are of a technological nature. Such effects may qualify or even reverse the policies' expected environmental benefits. For example, a Norwegian study shows that after buying (subsidized) electric cars, the purchasers—among the highest income earners—used their car more and public transport less to travel to work (Holtmark & Skonhoft 2014). Another example of rebound effects stems from teleworking. While teleworking could help meet some of the aims of greater wellbeing at work, the avoidance of unwanted mobilities—or even the response to Covid-19—seems to be associated with sometimes low environmental benefits due to associated indirect emissions, such as the increased use of digital tools (Aguilera et al. 2014). Even carpooling, as it makes traffic more fluid, might increase car use without appropriate measures (Coulombel et al. 2019).

The social scope of these policies is also questionable. Even if it remains impossible to grasp its full extent, various analyses focus on it. The permanent pursuit of supply measures occurs to the detriment of attention paid to the travel demand and to the accessibility of urban resources, and therefore to social inequalities (Fol & Gallez 2017). In both the French and North American contexts, several authors have questioned the fairness of some policies by pointing out the relationship between projects of pedestrian zones or bus rapid transit and the process of gentrification (Quastel et al. 2012; Brenac et al. 2013). The financial effects of such actions are also criticized, such as the introduction of congestion charges for car traffic in city centers, which particularly affects working-class inhabitants (Souche et al. 2015). The multiplicity of social relationships involved stands out in one publication after another: class, gender, racial discrimination, age, disability, etc. S. Hanson (2010), for example, has criticized the prospect of gender-blind travel-reduction policies, which would worsen the current accessibility difficulties faced by women in the United States. They make fewer trips than men on average and face greater difficulties in their mobilities. The lack of awareness of the issues related to racial discrimination, which permeates mobility policies, is also emphasized. The development of cycle paths in Philadelphia, in African American neighborhoods undergoing gentrification by white populations illustrates the 'racialized mobility transitions' (Sheller 2015). Evaluating these policies remains difficult, often because of their local or niche character, limiting the scope of more generalized assessment (Lucas & Pangbourne 2012). As a result, the inequalities (re-)produced by policies still needs to be documented in many ways.

The alignment of the dominant actors at stake here concerns the ambiguity of their actions in the name of transition, running from their formulation to their implementation. The multi-level perspective can be mobilized in a critical way using social-practice theory to investigate this environmental disjunction of policies. The resistance and interdependence of practices are key

issues, for example, in better understanding the rebound effects of actions undertaken, or the inertia of the decision-makers' growth paradigm. This inertia follows as much from a repetition of practices as it does from the landscape, its ideologies and macroeconomics. The legitimacy of alternative economic models is a major issue, if transition is to be more than merely an appearance—a simple adjustment of existing regimes. The examples of the spatial juxtaposition of dominant regimes, relating to Copenhagen as mentioned, or the gap between actors at different spatial scales (such as the contrasting scales of niches and regimes) show the importance of a critical reinvestment in the multi-level perspective in order to grasp these discrepancies, as well as to emphasize the spatial complexity of mobilities.

Conclusion: four research avenues for assembling mobile spatialities at the crossroads of policies and practices

Most work related to the environmental issues of mobilities focus exclusively on practices or on policies, therefore tending to compartmentalize their approaches. To strengthen the links between policies and practices, four research tasks seem to us particularly useful in understanding the assembly of mobile spatialities that policies and practices coproduce, as well as to identify what policies could learn from practices.

The first research avenue consists of better understanding the spatial situatedness of mobilities. When their heterogeneity has been tackled, it has often been in a binary way, opposing local spaces to national spaces or urban fringes to urban centers. These dual approaches could be questioned to better reflect the complexity of spatialities. What about, for example, mobilities linked to intermediate, suburban spaces, which are often very heterogeneous and fit in poorly with such a grid of analysis? How can the complexity of the (non-)coordination between actors at various scales, which follows multifold relationship networks, be considered? There is also a need to identify better the biases and specificities of the ethnocentric approach found above all in (north)-western Europe, the United States and Canada, as well as in the English-speaking literature, by strengthening investigations in other situations. The cultural and ideological specificities of Chinese political economy and society—and hence its landscape—play a major role in China's 'e-mobility transition', for instance. The spectacular growth of electric scooters is due to their combined use with smartphone applications, allowing the Chinese authorities to control such mobilities, while the success of scooters with young urban men of the rising middle class lends respectability to a means of mobility previously associated with the working classes (Tyfield 2014). The authorities' support for electric scooters and for this form of transition cannot therefore be understood without these surveillance, social and techno-nationalist aspects, while these industries are now spreading their models to other parts of the world. The challenge therefore also lies in understanding the circulation of these transition models, in this case, the spread of electric scooters, which involves appropriating policies and practices rather than simply adopting them. At stake here is the complete taking on of the processes of the multi-situated (non-)transition of mobile spatialities.

The composite character of individuals' mobile spatialities is a second research avenue for assembling practices and policies. How can one look again at the representations that tend to essentialize practice carriers, reducing them to a simple and tight identity, such as that of the motorist, pedestrian, or cyclist? Possible directions concern mobility socialization from childhood onwards (Oppenchain et al. 2017), looking more broadly at mobile practices over individuals' life course i.e., their mobility careers (Cass & Faulconbridge 2017). The changeability of adopted roles, close to what T. Chatterton et al. (2015) has qualified as flexi-mobility, allows for a more detailed approach of changing practices and the reinforcement of commitments to alter-mobilities that we

have all experienced, at least to some extent. The qualification of Philadelphia's bicycle lanes as 'white lanes' by some residents (Sheller 2015) clearly indicates the contradictions following from policies that ignore the potential uses of such infrastructures by major sections of local communities. The challenge is also to deepen the critical investigation of the instruments of public action and the imaginaries they convey, such as statistical surveys. For example, these continue systematically to assign multimodal practices in France to a single mode of travel (Commenges 2015). Extracting policies from decontextualized approaches that focus exclusively on travel modes and 'modal practices' is essential to have a better grip on the dynamics of mobile spatialities.

A third research avenue resides in a better identification of the environmental footprint of individuals' mobile spatialities and of the social (in)justice of their (non-)regulation by carbon taxes or other measures. A more comprehensive investigation of mobile practices that use environmental resources most intensively (Hui 2013), of the mobile spatialities, lifestyles and consumption practices they contribute to and of the social position of persons engaged in them is needed to prioritize actions in favor of an effective and just transition. This involves reconnecting within research and policies the links that operate in practice between the field of what has been often described as everyday mobilities and the field of large-scale mobilities. The latter mobilities contribute greatly in shaping mobile spatialities (Frétigny 2013; Munafò 2016), including from an environmental perspective. In contrast to these identified daily mobilities, large-scale mobilities, especially for tourism or for business, are often a blind spot in environmental policies, despite their notoriously strong environmental footprint, as they are often carried out by dominant actors such as policy makers themselves. The relationship with electronic mobilities, as well as with goods and their shippers, also matters in understanding the environmental and social footprint of spatialities involving e-commerce, vehicles for hire, as well as the delivery of meals, and hence the gig economy. Because environmental mobility policies are often largely oblivious to social issues (Féré 2012), from urban tolls to subsidized but still expensive electric cars benefiting from priority lanes on the road, the regulation of individual mobile spatialities and its (counter-)redistributive effects are major issues of concern.

A last research avenue concerns the concerted manufacture of mobile spatialities, a participatory construction that allows actions and practices to be coordinated. This is indeed a question of bringing out more common mobile spatialities, following the 'commoning mobility' called for by A. Nikolaeva et al. (2019), to restore collective room for maneuver. More democratic deliberation and research is needed regarding the effective exercise by everyone of a right of access to resource places, in other words a right to the city, but also regarding the identification of mobilities that could be avoided (especially the most painful), or should be avoided, in the regulation of travel demand, and concerning the relative spatial arrangement of resource sites. Such a participatory policy turn is clearly at stake in bringing policies and practices closer together. It arises acutely in the management of the (post-)Covid-19 crisis, as illustrated by tactical urbanism or teleworking. The sudden emergence of post-containment cycling 'coronapaths' in North America and Europe, to avoid cluttering up public transport, reflects the importance of planning processes more attuned to the renegotiation of mobile spatialities. M. Hynes (2014) and A. Aguilera et al. (2014) agree on the idea that until this crisis, telework, for activities that can be made at a distance, has been hindered because of its development from above in companies and in the public sector, out of step with employees' practices. An overhaul of teleworking and its integration into workers' spatialities following the Covid-19 crisis is therefore essential. Telework illustrates clearly the importance of a cross-construction of public policies between the spheres of travel, work, housing, and health in particular, as well as of a de-compartmentalization of current practices of policy making and their

imagination, in order to take hold of mobile spatialities and lifestyles, and to prepare for participatory approaches to change.

These four research avenues question both the multi-level perspective and social-practice theory. More attention deserves to be paid to these theories as regards spatial situatedness, the deconstruction of dominant representations of mobile subjects, the (un)regulated mobile consumption of environmental resources according to lifestyles and participation in common spatialities. Faced with climate change and a (lack of) environmental transition, in which mobilities are a key factor, this research agenda transgressing the divide between practices and policies is crucial in thinking about and preparing for the (im)mobile spatialities of tomorrow.

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