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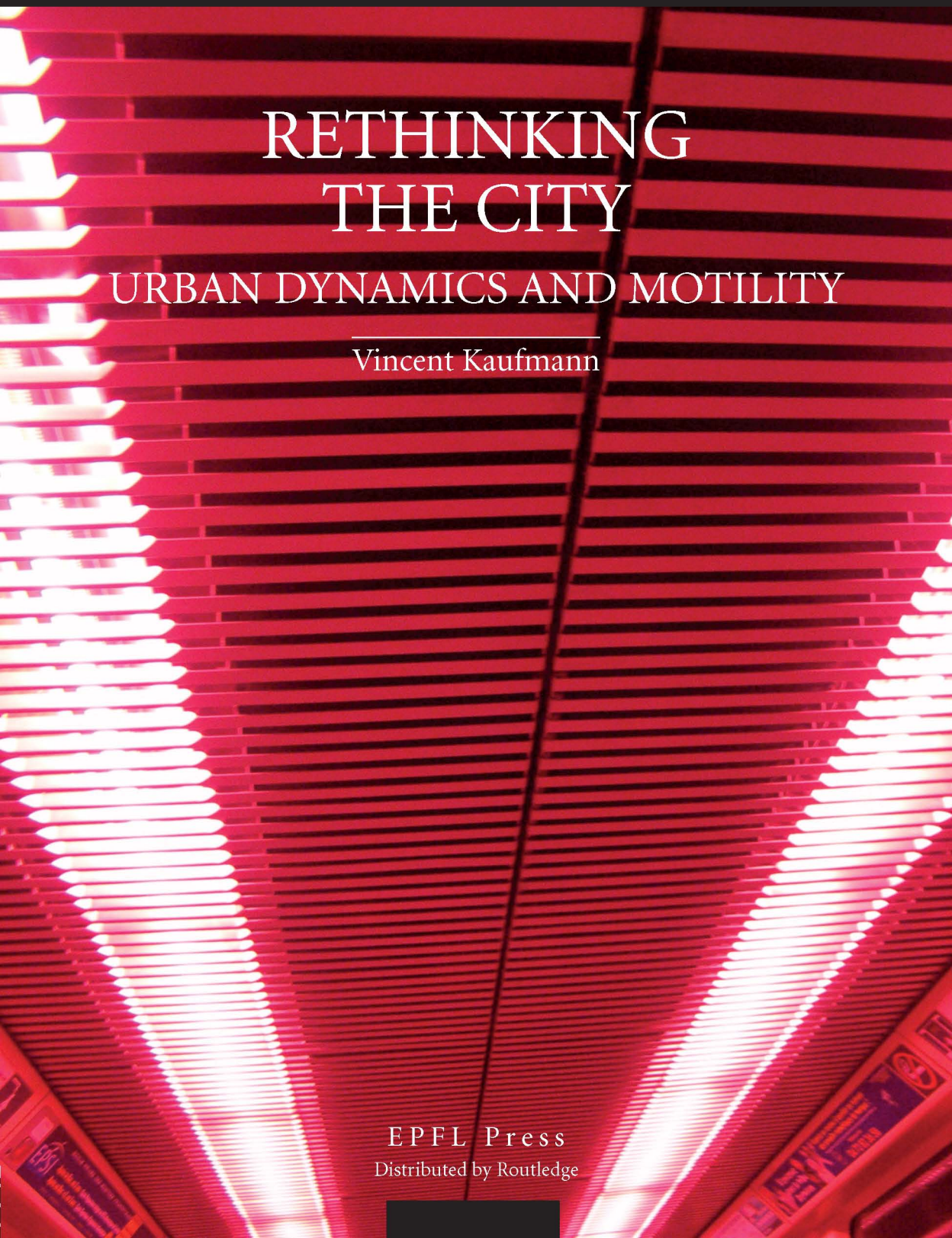

RETHINKING THE CITY

URBAN DYNAMICS AND MOTILITY

Vincent Kaufmann

EPFL Press
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Urbanism

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Preface

Rethinking the city

In this work I propose to define and analyze the city based on the movements and mobilities that traverse it.

Conditions for travel have changed and are still changing the world – a world that is experiencing what John Urry among others calls the 'mobility turn.' Since World War II we have been moving faster and going further. This fact has profoundly changed the way we experience both the world and ourselves. An explosion of low-cost travel options has likewise had an important impact on the economy, leading to the globalization of markets and changes in the modes of production. It is no longer possible to think of nation-states as autonomous vis-à-vis one another, or of cities and regions as homogenous spaces delimited by clear-cut borders. In short, societies, like Western cities, are redefining themselves via mobility.

What does that mean for the city, for its governability and its governance? In this work I will aim to assess the urban implications of the mobility turn as well as exploring today's urban phenomenon based on the mobility capacities of the players involved (i.e. their motility). At the same time I will ask the reader to consider the notions of "city" and "region" as a product of the configuration of a specific set of motilities.

The book stays true to a sociological perspective that strives to combine theoretical development with its dialectical relationship via empirical research, thus creating a dialogue between theoreticians and empiricists. The book's goal is twofold: it seeks first to identify how the motility of individuals, collective actors, goods and information acts as an organizing principle (or rather *the* organizing

principle) of contemporary urban change and then to determine what this means for urban governance by exploring the channels that might be used to regulate individual and collective motility.

Acknowledgements

This book, conceived and written over three years (between 2008 and 2011) was long in the making. Written essentially in cafés and on trains – the places where I was able to assemble the fragments of my thoughts – a great many encounters were made along the way. In Geneva, it was at the Buffet de la Gare Vernier-Meyrin and the Auberge de Châtelaine where I found the inspiration was the strongest; in the Ardeche it was at Jean-Luc's Auberge des Deux Aygues and Antoine's bar-tabac in Valgorge (with special thanks to the Boucharade whose free wifi connection was often a lifesaver); in Estavayer-le-Lac, Stéphane sometimes saw me spend whole afternoons in the Lacustre dining room; in Paris, Chez Gudule was my headquarters for early mornings and late nights, while Café des Cadrans also frequently hosted my morning writing sessions; in Lyon, the Espace Carnot made for productive surroundings. Many thanks as well to the SNCF for both its Geneva-Paris/Paris-Lyon TGV service and its improbable connections (like the Clermont-Ferrand-Nimes/Beziers-Neussargues lines in the Massif Central), whose comfort allowed me to theorize and where I was able to make some "definitive" headway.

Naturally I would also like to thank my colleagues as well as all those who nurtured me with their comments, remarks and criticism. I would especially like to thank the following people: Bernard Declève, Carole Després, Caroline Gallez, Charles Raux, Christophe Gay, Eric Widmer, Florence Paulhiac, Franck Scherrer, Gijs Mom, Gil Viry, Hanja Maksim, Huib Ernste, Iragaël Joly, Jacques Lévy, Jean-Marc Offner, Jean-Marie Guidez, Jean-Pierre Orfeuil, Jérôme Chenal, Joan Stavo-Debeauge, John Urry, Juan-Pablo Bocarejo, Julie-Anne Boudreau, Kamila Tabaka, Karel Martens, Luca Pattaroni, Luigi Stähli, Manuel Castells, Marc Breviglieri, Marie-Paule Thomas, Martin Schuler, Mathieu Flonneau, Mauro Magatti, Max Bergman, Nicolas Louvet, Nicole May, Olivier Coutard, Pierre Lannoy, Regina Witter, Sonia Chardonnel, Stéphanie Vincent, Sven Kesselring, Valérie November, Vincent Guigueno, Weert Canzler, Werner Stöhler, Yann Le Floch and Yves Crozet.

Vincent Kaufmann
Geneva, January 4, 2011

Paris 2011 - Fanny Steib

Introduction

1 Cities that change but do not disappear

While cities are not perhaps on the verge of disappearing, the urban phenomenon is nonetheless undergoing profound changes caused by the speed potential of modern transportation and communications systems. Beyond the terminological panoply and diversity of approaches, research shows that this transformation has not blurred those spatial and social specificities that make the city unique. Quite the contrary, in fact; these differentiations are becoming increasingly marked. What is more, they are evolving around new dimensions that are difficult to understand using static, regionalized concepts and are likewise affecting the channels that make political action on the urban environment possible.

The speed of modern transportation and communications systems has had a considerable impact on societies and their landscapes: not only are these systems overwhelmingly *appreciated* by the populations that use them most, but they are also often used in ways that diverge from those originally intended. Such landscapes (urban or otherwise) are now traversed by enormous disparities in terms of speed – from the slow, steady pace of foot traffic to the instantaneity of telecommunication – thus affecting the way use of space and time is organized and structured.

In other words the mobility of individuals, goods and ideas is at the heart of the global changes that are affecting all aspects of economic, political and social life. In addition to environmental issues that range from atmospheric and sonic pollution to in-ground waste and energy consumption, changes in mobility are

also resulting in some cases in unprecedented issues regarding social and spatial cohesion, as well as the cognitive management of information and increasing societal friction (i.e. multicultural tensions both locally and globally).

It is important however not to limit the study of mobility to an analysis of transportation and communications systems; the transport of both human beings and objects often derives from needs (or demands) that are rooted in human activity. Returning to the logics of actions that influence movement naturally leads us to explore their political and social consequences and allows for a comprehensive analysis of the way today's societies are organized and function. As such we must not only consider changes in the way people live (pluralism, individualism, etc.) but also the distinct technological and social forms that give rise to them (the evolution of economic structures, technological innovation, changes in values) and the issues they engender (new forms of inequality, the organization of opportunities, physical tensions, socio-cultural conflicts) as well. Surprisingly, little research to date has tackled these questions from a mobility perspective. If we take at face value Article 13 of the Universal Declaration of Human Rights, which states that individuals have the right to move freely, many works go on the more or less explicit assumption that an increase in flows simply reflects the democratization of this 'freedom' of movement which is ultimately our birthright.

In such a context, understanding and having an impact upon a given environment means having specialized knowledge of mobility and urban spaces' potential receptiveness to different projects.

Mobility cannot be reduced simply to movement in or through space; rather, it is in our interests and certainly behoves us to explore the full breadth of its meaning with regard to change. With the mobility turn, movement (its why, how and the way it transforms both space and society) can no longer be understood using abstract concepts that in no way relate to the experiences and aspirations of the actors in question.

The diversification of modal alternatives has introduced the element of choice in terms of residential location, equipment and mode of transportation where before there was none, provided the actors possess the skills and creativity needed to take possession of the technical systems for their personal or collective use. Innovation at both the technical and social levels continues to alter the access and skills that make mobility possible.

Considering the extent to which mobilities are influenced by material artifacts and the specificities of the built environment, actively looking at a city's potential receptiveness to mobility projects stands to reason. Most of our activities are made possible by the material devices associated with them (I am writing this book on my computer, for instance).

Thus does action, which naturally is situated in a given context, suppose that an environment will provide the footholds necessary for an individual to realize a project. In other words a given project cannot find footing just anywhere; some locations are better adapted to certain types of projects than others depending on the amenities, formalities, accessibility and real estate prices, all of which result from administrative actions by public authorities, private actors and various groups.

2 Grasping the transformation of city and territory through mobility

Throughout this book, I will consider the city and urban environment as the confluence of actors' mobility capacities and a space's receptiveness to their projects. While the concept of varying degrees of receptiveness to projects based on geographical characteristics is not a new idea, what is new with the mobility turn is that individual and collective actors can now choose an environment based on the opportunities made possible by speed potentials and the environment's receptiveness to their project.

I will also attempt to identify the levers that make regulating the motility of these actors possible, and in particular the potential receptiveness to urban projects. I will end with a more general reflection on public action and the means for governing this potential based on the levers identified.

My argument illustrates that thinking about the city requires theories and concepts that are actually based on the many types of movement that exist there: what transforms the city is its capacity for mobility and that of its actors.

It would be presumptuous to say that we are filling in all of the gaps in urban thinking in the pages of this book; the goal is in fact slightly more modest. I will begin by attempting to define the city and describe its true substance and dynamics based on mobility, and then test the heuristic virtues and limitations of our qualitative and quantitative empirical data.

This is not a new idea; urban growth has always been the consequence of migratory flows. And has not the city always provided a forum for the exchange and meeting of ideas?

Barely touched upon and, even more rarely the focus of urban research analysis, studies on mobility, travel and communication automatically tend toward the notions of transportation and technical/local networks. By considering mobility as the principle cause of urbanness (or non-urbanness), I hope to offer a novel stance from the perspective of the current research context.

And yet in doing so, I hope to avoid three pitfalls.

3 Avoid generalizations

The first is that of positing all-encompassing theories. Theoretical positions on the city and urbanness are typically appended to a discipline (and therefore partial). Too often expressed in exclusive terms, they have become apt at ignoring one another, with each being more or less unequivocally attached to its particular school of thought (structural functionalism, post-modernism, post-structuralism, take your pick). Each theory has undergone more or less isolated evolution within its specific research field (Kaufmann, 2002). According to Francois Dubet (and I agree with him on this point), the resulting ignorance has three major inconveniences: "The first is that general theories are dealt with factually as partial theories. The second is that intellectual trends play a key role because of the weakness of the choice criteria. Without a great deal of analysis, the third inconvenience could be the abandoning of the goals of classical sociology," (Dubet, 1994: 14). "Religious wars" are undoubtedly part of the charm (and more notably the tradition) of the social sciences but are also an obstacle to the advancement of knowledge.

All-encompassing reflection is of course an inherent part of ideology and helps render possible debate – a tradition dating back to schools of thought and other barons of research, the social sciences having been influenced by the Mandarin model and thus the predominance of power struggles and other allegiances. Several examples illustrate that so-called "general" theories in fact are not. On the other hand the formulation of these positions too often depends on the "scoop" logic. Thus is it for instance that certain claims regarding the rhizome model bear a kind of technological positivism or, contrarily, alarmism that presage a return to obscurantism. As John Urry observed:

"There are global enthusiasts who see these processes as producing a new epoch, a golden age of cosmopolitan "borderlessness." This epoch offers huge new opportunities, especially to overcome the limitations and restrictions that societies and especially national states have exercised on the freedom of corporations and individuals to treat the world as "their oysters." Others describe globalisation not as a borderless utopia but as a new dystopia. The global world is seen as a new medievalism, as the "west" returns to the pre-modern era." (Urry, 2000: 13).

How to debate such exaltation? The evolutionist lyricism evident in some writing is merely an expression of an obsession to recount the sensational. Commercial logic and trends have long since taken hold of the social sciences, at times creating a sort of intellectual trumping whose ultimate goal is not so much understanding as authorial recognition based on the number of times the product is cited or copies of said product is sold.

4 Confront theory with practice

The second pitfall I hope to avoid is *an absence of tension between theoretical reflection and empirical research*. In works on the city and the urban, empirical observation tends to occupy a paradoxical position; it is often used as proof of the veracity of the theories expressed. This use, both selective and non-exhaustive, is opportunist. Dialectic theory and empirical research is often missing in the construction of the models we have presented. Upon reading, many works arouse the same suspicions – that of witnessing an author's use of certain empirical findings to justify, rather than expound, on a pre-established theoretical position (Kaplan, 1996). Those irksome findings that contradict the said position tend, not surprisingly, to be overlooked. The Anglo-Saxon reception of Marc Augé's work "Non Lieux" (1992) ("Non-Places") is in this regard completely symptomatic. Religiously cited, this little book is often used as proof of the disappearance of regional borders. And yet while this book compares places (identity-based, relational and historical) with non-places (non-identity-based, non-relational and unhistorical) (Augé, 1992: 100), it was heavily criticized in the social sciences for this dichotomy. Augé defines the space of travelers and commuters as the archetypal non-place (Augé, 1992: 110). The extent to which the book has been criticized since its publication in 1992 shows that the space thresholds of mobility can themselves be places and references in relational terms – very much so, in fact – and even be identity-based, most notably by the intermediary of memory. In short, Marc Augé's theory has been invalidated. This however does not stop other authors from using his text as support for the theory of the non-places associated with the world of flows.

Essays and other works on the transformation of the city and the urban are teeming with citations of so-called empirical results that supposedly support (or justify) a theoretical construction (Genard, 2008). This is particularly the case for the common assertion in works on changes in the urban phenomenon that mobility coupled with the radical individualization of social practices has increased.

This double assertion is part of the foundation on which many researchers base their work. And yet upon closer examination of statistics regarding changes in travel behavior in European countries, the only thing that is certain is that the number of kilometers traveled has increased. What is more, while we are undoubtedly faced with the ever-increasing emission of information we must ask ourselves if this naturally goes hand in hand with an increase in the *reception* of this information. Does not too much information kill information? The practice of emailing has taken on mindboggling proportions, much to the detriment of

the letter, although their content is different in nature. We must understand what exactly it is we mean by 'an increase in mobility and in the circulation of information'; if it is an increase in the scope and speed of flows of which we speak, then the assertion is true; if it is augmentation of the number of commutes and of the reception of information, we had best be wary. More than growth, it would seem we are witnessing substitution phenomena between different types of locomotion.

Is this increase in flows a natural consequence of radical individualization or is it the cause? An observed increase in the scope and speed of flows is not intrinsically synonymous with an increase in social fluidity. Travel through geographical space in particular could very well be seen as a constraint to, and not a broadening of, movement in social space. Couples with two working partners are an excellent example of this. When both partners have jobs in different cities and decide to cohabitate, for instance, obvious concessions must be made. While one of the partners can ultimately give up his/her job, compromises are more often made around daily mobility and residential location (Kaufmann, 2008). Such examples illustrate the need to leave the theoretical world so that the two – theory and empirical research – might work hand in hand. More specifically they suggest that veritable theoretical thinking is in fact fed by empirical research.

Upon closer examination it would seem that the gap between theoretical debate and empirical research in the field of urban studies again has to do with to the lack of conceptual tools needed to deal with the issues of mobility and flows and, more specifically, the until-recent absence of hegemony in the framework of the areolar model of space coined by the social sciences.

5 Consider the substance of city and territory

A third common pitfall to be avoided is that urban sociology too often comes down to an analysis of urban social phenomena and does not always look closely enough at the substance and character of the city.

It is illusory to consider city-based fields of study as inherently representative of urbanness or as teaching us something about the city by the mere fact of their physical presence there. Such assumptions are no longer valid. The city no longer makes the society, as it is no longer the place unit of daily life; rather it has become a place we seek to escape from. Thus it is impossible to ascertain whether a social truth is urban or not based solely on an urban location. We must first identify the basic trends of the urban phenomenon and then the more specific local dynamics. So, what are the ingredients that make the city? How are they configured in space and time? How do they impact behavior? And how in turn does this behavior affect urbanness?

Taking such a position allows us to discount the many works of research that treat the city as nothing more than the land on which it sits and oft times

responding to a specific social demand. Urban research is rampant with articles on "hot" topics about highly specific issues: how do we combat violence in city suburbs? How do we stop urban sprawl? What is the most effective form of regional governance for a conurbation? How do we promote the use of alternative modes of transportation, and so on? Such intellectual 'sprawl' in fact only contributes to weakening thought on the city by not aiming to highlight the uniquely urban nature of the problems it tackles and, as a result, tends to lose sight of its ultimate goal.

The quest for urban substance likewise takes us beyond the individual level. A city is created and recreated via the actions of its inhabitants; it is also a reflection of the power struggles between public and private actors. Most importantly however the city can also be its own actor. Much like a computer writing and rewriting its own program (Fourquet and Murard, 1973), we must not forget that the city itself is an instrument capable of producing and reproducing itself. In other words the city acts as an agent of action and can be more or less receptive to the actors who populate it on a part-time, temporary or permanent basis. More generally a city can be more or less sensitive to different categories of inhabitants, offer more or less localized and diversified career opportunities to the populace, attract different types of investors and be more or less attractive depending on the confluence of these factors (i.e. its substance).

6 Scope and limits of this work

Throughout this book I will approach the goals stated above using three criteria allowing me to specify the limitations of my approach.

The first criterion is that of the European city, on which our empirical data is based. I chose this focus out of a desire for accuracy and in order to build a dialogue with the scientific literature relative to the topic. This does not mean however that we should have a specific view of European cities that we intend to contrast with other models.

The second is that of mobility and movement. In this book, I propose a reading of the urban phenomenon based on the movement of individuals, goods, ideas, etc. as well as an analysis of what these movements "do" to the city and surrounding areas and how these areas in turn influence movement and mobility. Based on this rather specific ingress following the precepts of John Urry (2000), who defined the purpose of sociology as the study of mobilities, I propose defining city and region.

The third criterion used is the decision, disciplinarily speaking, to position ourselves in the framework of sociology. Thus the concepts, theoretical approaches and survey methods used here relate first and foremost to this discipline. This choice is based on the desire to focus on individual and collective actors' capacity

for movement and the impact of this movement as well as the dialectic between actors' capacity for movement and a given environment's potential receptiveness to actors' projects. Our scientific position therefore consists in utilizing scientific literature on the city and territories from the fields of sociology, geography, economy, political science or urbanism for a sociological project aimed at defining the city.

The book is comprised of a general introduction and seven chapters organized around a double trend. First we will look together at the travel practices of those who frequent the city and the mobility potential the city offers them. Next we will explore the theoretical argument for its clash with its surroundings and from there formulate hypotheses on the city and urban environment in general.

The opening chapter explores current theoretical reflection on the city. More notably I will attempt to show that the social sciences will have to update the theoretical and conceptual tools it uses in order to understand today's city.

The second chapter will revisit the concept of mobility as change as well as a number of definitions with regard to movement in space and time (travel, motility, and network) beginning with the definitions of Sorokin and the Chicago School, the goal being to systematically link the spatial and social dimensions of mobility and travel.

The third chapter will explore the relationship between the mobility capacities of urban actors (individual/collective, public/private) and the receptiveness with which these are met in urban spaces, thus opening a discussion on the hypothesis that a conurbation more or less is the mobility projects that happen there and thus 'constitutes' urbanness. A definition of the concepts of city and urban today will be proposed and discussed based on these considerations.

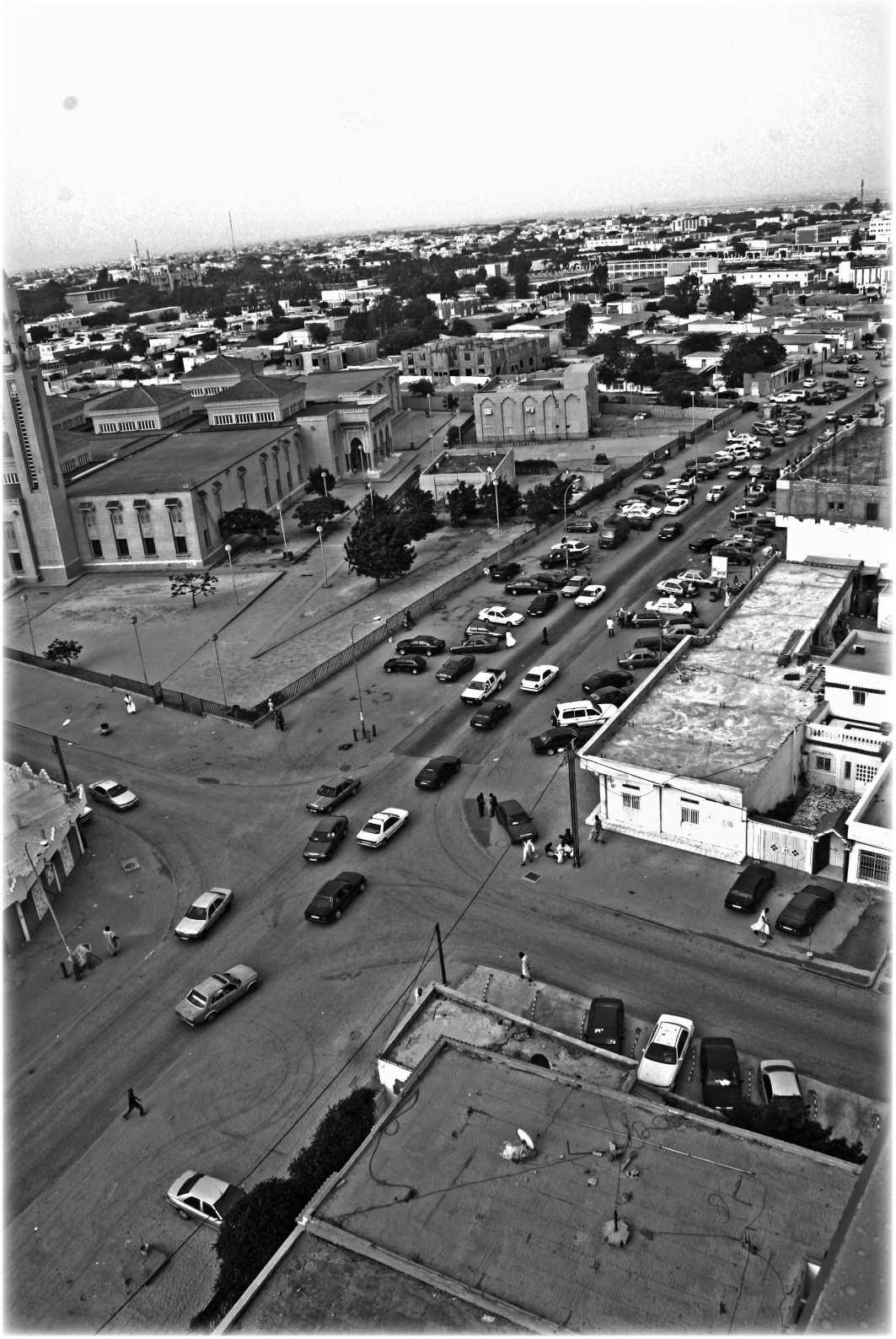
Based on our empirical research, the fourth chapter will explore motility, movement, the mobility of individuals and their respective impact on the generating of urban dynamics. This chapter will use several empirical research projects as support for its arguments: residential mobility and gentrification/peri-urbanization; daily mobility; highly mobile individuals.

After identifying the principal characteristics of collective motility and its effects on the composition of cities, we will look in chapter 5 at several examples of the public authorities' response to this motility around the themes of family politics (based on investigation of family politics as concerns mobility in Europe), urban planning policies and housing policies. In each case I will attempt to shed light on the mechanisms public authorities might use to regulate the motility of private groups.

Chapter 6 will explore the role that urban morphology and infrastructure play in making the city receptive to individual and collective projects based on

fieldwork from comparative studies. These examples will be used to re-examine the effects of urban artifacts and infrastructures on the city as well as the extent of their contextuality, thus paving the way for action in anticipation of temporal governance of cities and regions.

The concluding chapter summarizes the book's main arguments in the form of ten theories on what determines the substance of the city and how public authorities might develop this diversity. More specifically I will identify those ingredients that are unique to the urban context, with particular focus on those that favor mobility or those that, in contrast, favor reproduction. The aim here is to show how the city's substance raises questions regarding the creation of inequalities and individual trajectories for the field of sociology as a whole by re-examining several of the examples developed in earlier chapters. I will end by reflecting on the governability of cities and the instruments of governance that can make updating the city possible.



Nouakshott 2008 - Jérôme Chenal

Chapter 1

Rethinking urban theory

1.1 Introduction

For roughly a half century now Europe's cities and countryside have gradually been becoming more urban. This urbanness is the result of the confluence of interests of individual and collective actors, the potpourri of such actors' projects and the receptiveness these actors encounter when they attempt to set their projects in motion in a given environment. Mobility as change is therefore at the very heart of urban reality: the city and the urban are themselves mobility.

Varying degrees of contextual receptiveness to projects is nothing new. What *is* new however is that the actor (again individual or collective) can play with the speed potential of telecommunications and transportation systems and urban spaces' receptiveness to different projects.

In the fields of architecture, urban planning, geography, sociology, economics and political science we find numerous essays and other theoretical works describing this transformation of the city using a plethora of qualifiers. The city in transformation is "emerging," "éclatée," "diffuse," "franchised"; it is a "metropolis," and a "metapolis"; it is "global" and yet "generic"; it is "without places or limits," "fragmented," "segregated," and "privatized."

Above and beyond this colorful terminology and diversity of approaches (which mostly stem from profound apprehensiveness toward acute phenomena), research teaches us that the spatial and social distinctions unique to the city and urban environment are *not* becoming blurred; on the contrary, they seem to be becoming more marked and are edifying themselves around new dimensions.

Of the many ingredients that constitute a region's substance, the relationships of three have changed. It is these changes that are at the root of urban change today: 1) functional centrality – a city exerts its influence on the suburbs, for which it serves as a functional center; 2) architectural morphology – a city is characterized by the density and form of its buildings and infrastructures; and 3) lifestyles – inhabitants have specific social practices. Several decades ago centralities, morphologies and lifestyles fit together like Russian dolls, to use Pierre Veltz's analogy (1996); lifestyles were adapted to morphologies, functional centralities were hierarchically concentrated and city limits corresponded to functional jurisdiction. In other words daily life had multiple but relatively clear and solid borders; cities exerted their influence on the hinterlands according to modalities that were for the most part modeled by geographers. But today the Russian doll has burst and sent pieces flying in every direction.

This situation, it would seem, has resulted in the disappearance of the unity of place that once defined the city, thus calling theoretical approaches to the city into question. Since its birth (sociology pioneers having seen the revelatory nature of social and societal dynamics in big cities right away), urban research has been characterized by the plurality of its theoretical roots. Thus did Karl Marx consider the city the *lieu* of class struggle *par excellence*; did Emile Durkheim consider it the birthplace of modernity, born of freedom and risk of anomie; did Max Weber call it the cradle of capitalism and rationalization; and did Georg Simmel see it as the stage for cultural objectification and birthplace of the "urban personality" (Stébé and Marchal, 2007). All of these authors enjoy a faithful following in urban sociology, as do Manuel Castells's and Francis Godard's Marxist-inspired sociology, Maurice Halbwachs's and later Marcel Roncayolo's morphological analysis of Durkheimian obedience (works that look at the emergence of global cities that in their own way take up many Weberian concepts), the Simmelian urban ecology of the Chicago School and Goffmanian interactionism. With the gradual breakdown of the unity of place resulting from the bursting of the Russian doll, all of these approaches seem limited in their ability to describe, understand and explain the urban phenomenon, as all are in fact *based* on the implicit postulate of the unity of place and the fact that the city in some ways *makes* society. And yet nowadays urban dwellers can choose to break free from this framework and live outside of it in order to seek that which the city does *not* offer them, all the while returning there for work and/or leisure. By the same token, private actors and investors have a considerably broader range of choices when it comes to locating and relocating. The speed potential made possible by telecommunications and transportation systems has exponentially increased modal choice. This choice, democratized and available to the masses, has been greatly broadened by new offerings.

Paradoxical though it might seem, the issue of locomotion is (to a non-negligible extent) a "non-thought" in urban theory, except perhaps for certain Chicago School researchers. In fact it was for this very reason that the Chicago School's work turned numerous approaches on their heads. In the 60s and 70s the majority of empirical research inferred that the city was on the verge of disappearing – or at least dissipating. More prosaically put, we know that since that time, the dense city, brought down to us throughout history, delimited and marked by the congruence of its spatial contiguity and social proximity, has gradually been transforming based on the mobility of its inhabitants and actors. Thus we are forced to revisit the theories and tools of urban sociology of yore that are still in wide use today. A close reading of the urban phenomenon demands that we rid ourselves of certain static, regionalized and, most importantly, outdated concepts and interpretive lenses. This is not to say that everything has changed, and that urban sociology's contribution (and urban theory more specifically), was all for naught; on the contrary, this unprecedented scenario presents us with an opportunity to discuss these contributions' merits as well as their limitations, and adapt them to a contemporary urban theory that as yet remains to be constructed.

In undertaking this reconfiguration I will use a two-step process: to begin, I will discuss the three principles around which modern urban theory can be organized; next, I will identify three pitfalls to avoid based on lessons from the past. Having done this, I will re-examine certain theoretical trends such as the urban sociology of the Chicago School and Weberian and Halbwachs' approaches to the city in order to shed light on their contribution to the building of urban theory today.

1.2 Three theoretical principles

Working on the city and the urban today is a bit like being a pioneer sociologist in an era of chaos, where a longing for collective order enthusiastically marries with the enthusiasm of feasible achievement. In fact, pioneer sociologists attempted to equip mankind by giving it the intellectual tools it needed to understand how the world worked. And yet our tools for understanding the city are not as effective as they once were; nor do they function as they once did. We will now look at three areas that have been particularly touched by this scenario, allowing us to determine which principles urban theory should employ to enable our understanding of urban change now and in the future.

San Francisco 2008 - Jérôme Chenal

1.2.1 Reconciling abstract and sensory approaches to the city and the urban

In the economic and social sciences many approaches to the urban are limited to functional, abstract or non-comprehensive definitions of the phenomenon that tend to avoid its sensory substance. These cities can hardly be seen, felt – or perceived in any other way for that matter – as they are not real in the sense of being physical entities. Cities and place in general *also* have morphologies (i.e. shape). We can touch them, see them, feel good or bad when we are walking around in them and find them beautiful or not. Bringing together the various dimensions of the urban and urbanness supposes going beyond this vision to accept that we must abandon such metaphors for substance.

The observation just mentioned refers mostly to the division of work among those scientific disciplines that are active in the field of urban research, criticized by André Corboz in *La ville comme palimpseste*:

"There is almost no communication between the two groups of researchers that do work on the city, meaning geographers, city planners, sociologists, demographers, economic historians and historians in general on the one hand, and urban planning historians and architects who investigate the city's evolution on the other. The first work with statistics without taking into account the fact that the city is a three-dimensional object, while the others, for the most part, study urban morphology, building typology and their mutual relationship but for the most part do not concern themselves with the socio-economic factors that cause them. The two groups ask very different kinds of questions; likewise, their conceptual tools differ greatly. The latter feel the former are talking about an entity that is handled in absentia, like a soul with no body, substance or place – even if the built environment were different, their observations would still be the same, to which the former reply that the latter busy themselves analyzing a body with no soul when the city, according to Aristotle and Saint Augustine, is first and foremost a group of men – not a bunch of stones" (Corboz, 2001: 133). [Our translation]

Going beyond such approaches means taking into account material artifacts and how they lend themselves to the transformation of the city and urban, which takes us back to Maurice Halbwachs' approach when he describes the importance of morphological analysis and suggests we distinguish between physical and social morphology by inviting us, the researchers, to analyze the relationships of social groups to the physical environment (Halbwachs, 1970). The fact that a city is an archipelago or grid, is served by a meshed train network or major highway network, is mono- or polycentric, has or does not have an historic center, historical monuments, large closed parks or open green spaces, has a river running through it, is lakeside or is on the seacoast – all of these characteristics have an impact on social practices, the probability of meeting others, where these

meetings take place and how inhabitants take possession of the city and live their lives. Such characteristics also have an impact on behavior via a process of gradual sedimentation through which a unique world is created and effects changes over time on collective actors – by influencing the way they present themselves – and on the attractiveness of potential real estate locations with regard to one another.

Thus the material artifacts that withstand the test of time in a given environment are still important long after their initial installation. This transformation is recursive, as the built environment is interpreted and experienced differently with the passage of time. In their book *Paris: ville invisible*, Bruno Latour and Emilie Hermant illustrate the relative nature of this constancy of urban artifacts using the emblematic example of the Pont Neuf, an artifact not unaffected by the passage of time. Rather it evolves at its own pace:

"The difference between bridges made of stone, organs made of flesh and policies lies not in their nature but rather their life expectancy," (Latour and Hermant, 1998: 145). [Our translation]

Many of the material artifacts that fill our built environments have relatively long rates of renewal and change, often taking twenty or thirty years, sometimes more. Thus may a given object tend to take on different meaning over time; old popular neighborhoods today evoke nostalgia for a working-class past and are for this reason sought after by populations with strong cultural capital.

For the sociologist, going beyond an abstract, disembodied approach to the city and urbanness means resisting the temptation of reducing human action to strategies that can more or less be interpreted based on sophisticated ideations of rational choice. This type of approach in fact merely turns the city into a playing field where opportunities are up for grabs and the ability to achieve is a fundamental goal, thus negating many of the more sensitive dimensions.

To go beyond such limitations we must consider human action as fundamentally pluralistic and in doing so, join Max Weber (Weber, 1922) and his *homo sociologicus* – a tradition endowed with the potential for combining logics of action that gave way to the works of authors such as Raymond Boudon (1995) and Francois Dubet (1994). Most recently this tradition saw new developments in the area of pragmatic French sociology, an approach that offers a veritable methodology for considering this plurality by using *régimes d'engagement*[1] (Thévenot, 2006). This means recognizing that not all human action is strategic; rather it can be born of routine or familiarity, and its logic (to use Anthony Giddens's words) is to guarantee well-being, ease and ontological security. It can even be born of ethics or values (Giddens, 1984). Cultural rationale or experience-based rationale can make us feel ill at ease in the most "modern, functional" environments

[1] The different ways of investing oneself: 1) socially, 2) psychologically or 3) politically.

(Rappoport, 2005). Much like the side effects described by Jon Elster (Elster, 1983), merely saying we want to be comfortable is not enough to make it so. Ontological security, or the "regime of familiarity" (Thévenot, 2006), is another way of relating to the world that allows us to acclimate gradually and establish our routines and habits. Laurent Thévenot recently systematized these reflections in the wake of a series of works by different authors by considering how three regimes –justification, routine action and familiarity – preside over all human action.

1.2.2 Opening up the static conception of space

How can we possibly hope to understand an urban phenomenon that results from the meeting of the mobility aptitudes of actors, speed potentials and the environment's receptiveness using static, enclosed conceptions of space?

The notions of population density and spatial segregation are good examples of the problem at hand. The population density of a space is measured by the number of inhabitants per surface unit. We know however that social integration does not necessarily take place close to home; daily activities (shopping, work, school, etc.) occur over much vaster spaces. What then does residential population density really mean? In the cities of fifty years ago where social integration happened closer to home, this equation naturally made sense. But what about today? Human density indicators give a distorted view of the population's localization or more precisely, a nocturnal one; they tell us where people sleep but nothing of their whereabouts during waking hours. It is interesting to note that similar types of human density indexes based on number of inhabitants and jobs per surface unit were developed in an attempt to remedy this problem. In reality however they only solve part of the problem, seeing as work-related travel represents less than 30% of commutes on a given weekday.

The case of spatial segregation (a key concept in urban geography and sociology if ever there were one) is even more telling. These indexes aim to measure the concentration of populations with similar characteristics in a given space. As they too are based on residential location, they obviously run up against the exact same problems as those used to measure population density. The problem goes one step further with spatial segregation however, as segregation indexes are typically intended to facilitate the identification of social inequalities. And yet we can easily imagine a city that is highly segregated residentially-speaking but whose inhabitants (even the more disenfranchised) are extremely mobile in their daily lives and thus mix with other populations. Is this city less mixed than one whose segregation indexes are much lower but whose inhabitants are artificially shuttled to other, often distant, locations using different modes of transportation?

The intersection of speed differentials in cities has redistributed the degree of importance of the different spatial forms – areolar, reticular and rhizomatic (each

of which refers to a conception of space) – in the modalities of social integration (Kaufmann, 2002).

Areolar space is a static, enclosed space characterized by an inside and outside and identifiable limits. The individual occupies a *place* in this space, with mobility consisting in moving from one place to another. Most conceptual and methodological tools in the social sciences – like density and spatial segregation (the two examples we have just developed) or the mapping of zones, social class or national public policies – are founded on this model. Most of the static sources available to us today implicitly refer to areolar spaces and their criteria for social (socio-professional categories, household makeup) and spatial (countries, administrative regions) differentiation, thus bringing us back to a definition of space as theoretically relevant, homogenous and delimited.

Reticular space is a functional arrangement of discontinuous open lines and points with topographically-identifiable limits. In this conception the individual disposes of access to the network that is space. Access is a key issue and material support for access crucial (Rifkin, 2000). Conceptually the idea of network has seen a great many changes in terms of analyzing social relationships (social networks, social capital), technical and regional networks (agglomerations, automobile dependency) and their impact (fragmentation). Literature on global cities often refers to 'network' when highlighting the interdependency of cities based on overhead lines or call volume (Taylor, 2004).

In a *rhizome,* distance no longer matters. Instead, the populating of time supplants the populating of space, which is smooth, undefined and open and in which opportunity and potential are in constant flux (i.e. a rhizome). The world here is no longer a vast interface. Rather, "[t]he instantaneousness of ubiquity leads to the atopy of a single interface," (Virilio, 1984: 19). The conception of space as a rhizome was inspired by Gilles Deleuze and Felix Guattari's work on deterritorialization (1980); its conceptualization led to the development of "real time" telecommunications. In addition to offering no empirical proof, this conception suffers from a kind of technological enthusiasm that assumes that technological innovation has radically changed the world (in this case, the digital spaces of telecommunications). No one denies that whole areas of finance now function in real time or that "virtual" communities exist on the Internet, but excuse me for doubting that either will provoke the cataclysmic events predicted by Paul Virilio and some of his disciples.

These spatial forms largely correspond to the three generic types of space (place, air and network) proposed by Jacques Lévy (Lévy, 1994). While *air* and *network* neatly correspond to what we call *areolar* and *reticular* spaces, the issue of place is slightly more complicated.

Jacques Lévy defines place as "a space in which the notion of distance has no importance," (Levy, 1994: 52) [Our translation]. When distance becomes important, we move from *place* to *air*. And yet, can we really delimit places in which distance is inconsequential? In a café for instance do we not choose a table based on the distance that separates it from other tables? Being comfortable in a space after all depends on respect of interpersonal distances. When others invade our personal space (like on a crowded bus for example) our sense of well-being suffers. In a room where two people are speaking softly so as not to be overheard by a third, we find the effects of distance. Likewise can we observe the influence of distance in physical space. Which brings us to the rhizome – a space in which, according to Deleuze and Guattari, distance has no importance and thus is a *place*, by Lévy's definition. This however essentially falls under the category of telecommunications and instantaneity. In this way true *place* is above all a virtual space.

As long as the city and the urban continue feeding on the spatial forms presented above, urban research will be forced to develop concepts that both embrace them and emphasize their structure and organization. The key dimensions of an environment's substance (ways of living, functional centralities and morphology), are organized according to the type of space. Certain attempts to "re-conceptualize" the city based on networks or flows tend to omit this fact. Works on global cities, such as that of Saskia Sassen (Sassen, 2001), thus sometimes lean towards this, forgetting that so-called global cities are defined not only by their flow of capital or the presence of multinationals and airport hubs but the areolar spaces of their hinterlands and national standing as well. Adopting the concept of reticular space has not caused areolar space to disappear any more than the rhizome concept of space has killed the other two (Offner and Pumain, 1996). It would be wrong to substitute a decidedly reticular or rhizomatic approach to the city with an areolar one and thus fall into the trap in which social research is currently caught.

Radical though its effects may be, the compression of space-time should not mask the fact that is above all the diversity of speeds that has so greatly increased and that is the reason for the Russian doll bursting in the first place. The unity of speed that allowed for areolar organization in a space whose boundaries married with the speed of the horse or the steam train has also by its apparent "normality" has made us forget the important role travel and mobility play in the forming of regions. Today's variety makes areolar congruity between lifestyles, functional centralities and morphologies impossible as actors have such a wide choice available to them in terms of speed. This makes putting mobility at the core of urban thought all the more crucial.

1.2.3 Considering that first and foremost mobility is change, not movement

The argument developed above illustrates that in order to understand the city we must use theories and concepts that are themselves based on the many types of movement that traverse it, for ultimately it is a city's mobility capacity (and that of its actors) that transforms it. Again, this is not a new idea. Already, in the 1930s, Chicago School researchers spoke of the "man gifted in movement" as being the crux of urban sociology. This conjecture has not become any less true over time insofar as co-presence remains the cornerstone of sociability and social integration, despite the influx in virtual means of communication. Consequently actors' mobility is at the heart of urban dynamics phenomena and is a powerful gauge for analyzing their constitution, as we have seen in the preceding pages. Mobility, valued economically as a vector for growth, is also a fact of life for employees whose companies demand that they be mobile. What is more it takes on new forms that combine telecommunications, transportation and residential aspirations, utterly disrupting the temporalities of daily life and destabilizing the institutional infrastructure by calling for the reform of decision-making bodies at their very core and ultimately casting a doubt on the governability of urban areas in so doing.

The preceding discussion illustrates that understanding urban dynamics today means taking a rich and substantive approach to the concept of mobility – one that incorporates its social *and* spatial dimensions, thereby allowing us to definitively gather the pieces of the puzzle that research, over its history, has forgotten about or scattered, and reassemble them. And so will I turn to the works of Michel Bassand to provide us with a singularly stimulating basis for discussion.

Naturally the application of these few methodological points will not render possible an immediate and comprehensive formulation of a new urban theory. Moreover, this is not my goal. On the basis of these principles I hope rather, more modestly, to begin laying foundations by testing the heuristic qualities of our method and as such contribute to the scientific debate on the transformation of cities and regions.

Sète 2011 - Fanny Steib

Chapter 2

Defining mobility

2.1 Introduction

We are without question going faster and further. In terms of flows this means an unprecedented increase in distance traveled. For instance, commuter traffic for all types of travel in Western Europe rose from two to five billion between 1970 and 2005. But the question is, does this mean we are more mobile? That of course all depends on how you define mobility.

So just how do we define mobility? When a geographer uses the word 'mobility' the goal is to evoke the idea of *movement through space,* unlike the traffic engineer, for whom mobility means *transportation flows*, or the sociologist, for whom mobility refers to *a change in social position or role*. This diversity of meanings, far from being an asset, in fact becomes an obstacle in terms of understanding mobility. In other words when we talk about mobility we are not exactly sure *what* we are talking about: it all depends on which branch of the social sciences we are coming from.

In this chapter we will explore the history of mobility research. As the study of mobility has been divided and subdivided among this multitude of research fields we will also look at how taking an integrative approach to the phenomenon facilitates the establishing of a conceptual framework, allowing us to both distinguish mobility from transportation behavior and to make motility the focus of our analyses.

2.2 The gradual fragmentation of mobility studies in the social sciences

2.2.1 The pioneering work

The term 'mobility' came into use in the social sciences in the 1920s with the works of Sorokin and the Chicago School, who defined mobility both in terms of change and movement.

In 1927, Russian researcher Pitirim Sorokin, having emmigrated to the United States, published a work entitled *Social Mobility* in which he laid the foundations for what was to become a dedicated area of research in the field of sociology (Sorokin, 1927). Sorokin defined social mobility as a change in profession and identified two types of trends: *vertical mobility*, which implies a change in position (upward or downward) on the socio-professional ladder (i.e. an employee who becomes his own boss), and *horizontal mobility*, referring to a change in status or category but without change on the vertical axis (leaving one job for another that is identical in terms of qualifications and remuneration). In Sorokin's construct mobility *could* in some ways be interpreted as movement in space, but its more precise implication was change at the social level.

During the 1920s the Chicago School's work placed the study of mobility in a dynamic analytical framework. While their work focused on the interplay between cities, their morphology and social relationships, it looked first and foremost at the social system, its functioning, organization and the changes therein. Geographical mobility, residential or daily, came to be considered a fundamental aspect of urban living. The originality of this thinking lay however in the fact that mobility was seen as a factor that actually contributed to disorganization and destabilization and thus as a vector of change.

In the United States at that time transportation science was also under development, paving the way for a new tradition in urban mobility analysis. As a field dedicated entirely to movement in space, it quickly broke free of the sociological constructs of Sorokin and the Chicago School's definitions. Pierre Lannoy shows that a split around the automobile followed the division of research areas, with the Chicago School on one side and transportation science on the other. While receiving a great deal of attention from and investment in by the former, this division was largely ignored by Chicago School sociologists (Lannoy, 2003).

The emergence of transportation science was concurrent with the rapid increase in individual motorization that began in the U.S. in the 1910s and after World War II in Europe. As traffic flows and the need to regulate them increased, the creation of traffic flow simulation tools, with many still used in transport economics today, became indispensable. Thus at the dawning of World War II the

field of mobility was already divided between sociological research, which defined it principally as a change in position, role or status, and transportation science, which regarded it as flows in space.

2.2.2 Fragmentation of the research

Beginning in the 1950s social mobility analyses changed their focus and started looking at career paths, the intergenerational transmission of professional categories, and issues of social inequality resulting from social reproduction and movement (or not) on the occupational ladder. This focus breathed new life into the field of sociology, making it among the most dynamic research fields of that time one that was soon to become autonomous with regard to work on the city and the urban.

Transportation science, now autonomous, developed concurrently with sociological thought on social mobility, gradually focusing on fluid dynamics-based models and developing its own definition of mobility relative to movement in physical space and flows of particles, individuals, cars, motorcycles, etc. in the space we call 'the street' more specifically.

One of the main causes of this radical split was the issue of time scale. Traffic models, which when used to project traffic flows are based on the assumption of the temporal stability of behavior, are limited almost exclusively to the short-term. Unlike sociological approaches, which favor longer temporalities, these models include stasis, thus reinforcing their a-spatial character (Gallez et Kaufmann, 2010).

As World War II ended, geographical approaches to mobility structured around four categories of spatial mobility were developed in both fields. Daily mobility, travel, residential mobility and migration, the principal forms, were distinctive in terms of temporality (long or short) and the spaces in which they took place (in or outside a population basin. See Table 1.), with each form becoming the subject of extensive literature, conceptualization, discussion and review – in short building and structuring itself like any other research field. Once again the study of mobility divided.

Table 1 The four principal forms of spatial mobility.

	Short temporalities	Long temporalities
Within a population basin	Daily mobility	Residential mobility
Outside of a population basin	Travel	Migration

The idea of mobility – moving from origin to destination – nonetheless remained common to all four areas. This new approach coupled the idea of mobility as movement with mobility as change, thus offering a link between these two types of phenomena.

Though the fragmenting of spatial mobility analyses into four distinct areas led to several noteworthy scientific advances, it did not facilitate the handling of the issue due the autonomy of the research areas it produced.

2.2.3 Daily Mobility

Beginning in the 1970s daily mobility analyses, which described the movements associated with routine activities, developed powerful tools for observation. And so were born in-home surveys on daily mobility, allowing researchers to accurately collect and measure data on origin-destination movements while simultaneously gathering detailed information on households and individual socio-demographics. Increasingly sophisticated indicators were developed to describe daily movement patterns based on these sources, followed by the creation of modal choice models. The question of individual modal choice gained so much importance in fact that it became an area of investigation unto itself. Early, rudimentary models developed in the U.S. were theoretically founded on the micro-economics of discrete choice (Mac Fadden, 1974). While optimized use under generalized cost constraints remained the basic assumption, the parameters of the individual utility function (socio-demographic characteristics, revenue and residential location) were explored in greater detail.

Among the more important advances, time geography left its indelible mark on daily mobility analysis. Time geography conceptualizes daily mobility based on activity schedules within the constraints (which define accessibility) of the space and time in which these activities (the way individuals satisfy their needs and desires) are realized (Recker et al., 1989). Proponents of this approach favor the study of daily mobility at the household level as opposed to the individual level, as schedules tend to be more structured due to the need to share tasks and vehicles. Methodologically, the space/time activities approach draws upon graphic representations of activities indicating the distance traveled from home over the course of a given day. This approach, while abstract, integrates the spatial dimension in the form of distance travelled but often without consideration of the specificities of the urban context (i.e. city center or periphery).

The introduction of time parameters to the study of daily mobility made it possible to look at individual modal behavior by placing it in the broader context – that of the interplay between mobilities and urban planning. Yacov Zahavi's observation of the constancy of daily time travel budgets was useful in redefining one of the core mechanisms of daily mobility: the greater our ability to move the

more spread out our practical space becomes; thus the daily time budget remains more or less constant (Zahavi & Talvitie, 1980). Works subsequent to Zahavi's tend to rely heavily on this conjecture. Alain Bieber's synthetic formulation of this hypothesis offers us a clear illustration of how this dynamic functions:

The increase in our rate of travel – the result of improved modes of transport and important investments in the automobile and public transportation – does not make for time saved but rather enlarges the spatial field of movement by maintaining the relative stability of the individual's transport time budget. (Bieber 1995) [Our translation]

2.2.4 Residential mobility

Residential mobility analysis aimed at understanding changes in residential location within a given geographical area focusing primarily on its causes, links and consequences. It began in the 1960s and saw continued development with work on residential history (Bassand & Brulhardt, 1980). The fact that over time individuals do not necessarily move closer to their places of work or their daily activities was undoubtedly one of the most notable observations that came out of this research and one that, moreover, can be rationalized according to the Zahavi conjecture.

Studies on residential trajectories, beginning in the 70s, and inspiring the works of Roderick MacKenzie among others, addressed the link between residential mobility, career paths and life trajectories. Their findings show that in Western societies between the 1960s and 1990 changes in life trajectories in fact highlighted the intrinsic link between mobility as change and mobility as movement. Parenthetically it demonstrated at a practical level the importance of having a definition of mobility that incorporated change. Thus researchers observed that the decision to relocate was largely triggered by another major personal event such as a job promotion (leading to an increase in income), the arrival of a baby or a divorce.

The interpretive advantage of such a dynamic analysis of residential mobility did not stop at the household level however. Among the most significant advances in this area was evidence that residential mobility had been at the root of social segregation dynamics in cities in the U.S. since the 1960s, thus leading to the paramount observation that residential mobility shapes the city. This widely documented observation is based on three principal phenomena: peri-urbanization, gentrification and relegation, to use Jacques Donzelot's terms (Donzelot, 2004).

According to the literature on mobility the driving force behind peri-urbanization is a wildly popular model of social achievement that unites 1) property ownership of 2) a single-family home with 3) proximity to wilderness areas (Charmes, 2005). Concurrent with the peri-urbanization phenomenon, another urban phenomenon was taking place: the return to old, inner-city neighborhoods by certain

populations. This second process, known as gentrification, characterized by skyrocketing real estate prices that gradually transform neighborhood demographic structures in favor of the more affluent by displacing working-class and underprivileged populations, was first apparent in the 60s and peaked in the 90s. Relegation, the third phenomenon, which can be defined socially-speaking as the pauperization of neighborhoods because of the residential mobility of certain groups that tend to become property owners in peri-urban areas or other urban neighborhoods, is in part a result of the first two. Often associated with the housing-project (*grands ensembles*) crises in the city suburbs, this phenomenon is essentially self-perpetuating and fuelled by factors such as the reputation of schools.

2.2.5 Migration

Migration, a veritable field of research in its own right, has been the object of numerous studies since the beginning of the 20th century and was also one of the favorite themes of the Chicago School. From early on, these studies looked at internal and international migration as well as (and more importantly perhaps) the phenomenon of 'urban flight.' Researchers interested in migration phenomena proposed a great many 'laws' and models, beginning with Ravenstein's 'Laws of Migration,' the Stouffer models on the process of attraction and repulsion (the 'push-pull' model) and the Zipf model, which incorporated the effect of distance in 'push-pull' models. These approches, quantitative at the start, gradually became more qualitative. In the 1980s for instance anthropologists began examining diasporic migrations and the migration of minority groups such as homosexuals that have developed an international network of solidarity similar to that of more traditional diasporas. Research shows that migration can only be productively understood relative to other forms of movement. As such, treating migration as a research field unto itself disconnected from the other three is therefore of little interest.

Of the four research areas presented here migration is unquestionably the richest; its contribution to our working knowledge is so great that it is impossible to even begin summing it up here. Instead we will focus on those contributions that have the greatest impact with regard to our goals here.

To begin, the Stouffer and Zipf models, which fathered a great many offspring (most notably the works of the gravitational school), aimed at comprehending migration patterns based on three factors: the distance between the departure and arrival points, the power of repulsion at the departure point and the power of attraction at the arrival point (Bassand & Brulhardt, 1980). These ideations, criticized for their mechanistic nature, later blossomed into dynamic models with a more scalable view of the migration process. The grounding in a temporal dynamic that the effects of the potential retroaction of population movement on both host and native countries takes into account is further proof of the

impossibility of isolating migration from the social context in which it takes place. Thus a migrant's social integration depends not only on his own skills but also on the receptiveness of the host society, which in turn depends on a variety of factors ranging from the job market to a community's housing capacity. The modalities of integration by immigrants in turn transform the host society. Such exchanges, far from being peaceful, are often characterized by domination and even violence.

This dynamic notion of migration brings with it another important, more modern contribution – namely the idea that migration cannot be dissociated from other forms of movement. Immigrants usually have highly specific travel destinations (i.e., their native country) as well as specific residential and mobility characteristics. They are also more likely to be tenants than homeowners, shop in 'ethnic' grocery stores and frequent certain 'ethnic' establishments, a phenomenon linked not only to spatial mobility but social mobility as well. Thus we can posit that paths of upward social mobility are specific to the immigrant, the type of migration and the immigrant's profession. This observation illustrates the importance of using a global approach when it comes to mobility.

By the same token the reversibility of migration phenomena also proved an essential finding. In the 1980s numerous analyses of migration patterns noted gradual changes in the phenomenon resulting mostly from advances in communication technology and the accessibility of long-haul flights. Emigration no longer meant definitive uprooting and re-rooting; finally one could imagine returning to one's native country at some future time. Moreover, staying in touch with family and friends via regular visits or phone calls, keeping up on local events via the local press online or even watching the national television channel all contributed to the broadening of the field of possibilities.

2.2.6 Tourism

Tourism, the least developed of the four areas, partially due to the difficulty of pinpointing notions of pleasure or fun in a theoretical framework, developed into a social science in the 1960s, melding with the larger themes of consumerism and mass culture. Researchers recognized individuals' need to escape from daily routine to have new experiences, and that this desire for new experiences (festivals, sporting events, street fairs, etc.) was in fact the drive behind tourism. Research shows the phenomenon was greatly influenced by increasing options in terms of transportation: the train changed tourism at both the temporal and spatial level beginning at the end of the 19th century, followed by the car, which diversified practices and enabled its massification, and finally the airplane, which rendered faraway destinations accessible.

Early works examining mass tourism associated with the automobile and charter flights emphasize the superficial nature of prefabricated "pseudo-events."

(Boorstin, 1964) This controversial, somewhat simplistic hypothesis was later replaced as elitist, and initiatory travel was gradually replaced by recreational mass tourism. These works offered interesting insight into the paradoxical relationship between tourist and destination, suggesting that tourism is a process of simplification by which culture is 'staged,' making it more palatable (and thus marketable) to the masses. Many tourists do however seek authenticity and are genuinely fascinated by 'real life' in the places they visit (Urry, 1990), a paradox that highlights the link to 'otherness,' bringing us back to the dualistic nature of mobility as change *and* movement. Why travel if not to discover a *somewhere else*? At the same time this 'somewhere else' must be rendered accessible to the outside world.

In the 1980s researchers announced the birth of a term for a new kind of traveler that broke this mould – the *post-tourist* (Feifer, 1985). This type of tourist understood and accepted that authentic tourism was in fact impossible but learned to appreciate his role as a tourist, with all the uniqueness this perspective offers. Above all the post-tourist seeks pleasure, ambiance and well-being, yearning not so much to 'discover' as to step outside of his everyday role.

As the above examples show, none of the four areas has managed to entirely do away with the two-fold definition of mobility. They do for the most part however correlate social change (understood as change in social status or role) and movement: we move on a daily basis in order to *change roles*; we travel to confront otherness and escape our daily grind; we move when our lives are touched by change. With advances in transportation and telecommunications in the 90s, the parallel between movement and change gradually dissipated, as work on post-tourism suggests. We learn in more or less veiled terms that being a tourist is above all a frame of mind, meaning that we can even be a tourist in our own city.

2.3 The need for an integrative approach

2.3.1 Postwar changes in society

From 1945 to the mid-1980s Western society saw itself barraged by an ever-growing number of choices in terms of consumerism, lifestyles and life trajectories. Among these were professional choices (which occupation, whether or not to pursue a career, etc.), family-planning (to have children and, if so, how many), leisure activities, modal choices (the choice of different modes of transportation) and choice of vehicle (one or two vehicles, make, model, etc.). Mobility at this time was guided by the notion of progress, and humanity on the whole was perceived to be heading towards a bigger, better, brighter future. The job market, with woman entering the workforce *en masse*, was booming. Buying power was on an upward trajectory and morals were loosening. Mobility however remained firmly rooted in spatial and social structures defined largely at the national level. Professionally

speaking upward mobility manifested itself in the form of interregional migration between urban centers and outlying areas (Bassand & Brulhardt, 1980). Young people left small towns to attend universities in big cities and, upon receiving their diploma, returned to their small towns where the chances of securing a good position and becoming upwardly mobile were better. And so movement in the geographical space came to equal movement in the social space, making it possible to juggle these parallelisms with respect to strategies of upward mobility.

This period, so marked by technological enthusiasm, greatly prized the modernity that was synonymous with speed of travel (note that the Concorde and TGV were born during this period). Major highway networks were built, and households helped boost the automobile industry by investing heavily in cars. Home appliances (refrigerators, freezers, washing machines, etc.) changed the rhythm of daily life. Shopping for household provisions intensified, becoming a weekly event rather than a daily one. The hypermarket, accessible only by car and whose popularity was greatly facilitated by television and radio advertising, is emblematic of this change in consumer habits.

In the 1980s choice in terms of mobility reached new heights as a result of both the pursuit of instantaneity, the increasing number of potential mobility projects and a redefining of the notion of social achievement. But it was undoubtedly the telecommunications industry that saw the greatest change with regard to mobility. The personal computer appeared at the beginning of the 80s and was networked ten years later. At the same time the mobile telephone exploded onto the market, becoming more and more sophisticated until, by the end of the 90s, users could send and receive text and multimedia messages as well as photos. Today we can enjoy WIFI service on our laptops in an increasing number of public spaces.

In the public transportation sector, while high-speed train networks were gradually being built throughout Western Europe, the airline industry was experiencing a low-cost revolution. Concorde discontinued its service in 2003 (after all, who really needs to get to New York in five hours when we can teleconference instead?). The race towards that instantaneity that only telecommunications can offer was on.

Simultaneous with these technological evolutions and revolutions, the economy became globalized; nation-state capitalism mutated into global capitalism and the mobility of individuals, goods and information became more fluid and less fixed in geographically-bound social and spatial structures.

At the societal level this second phase was synonymous with the abandoning of classical upward mobility models in favor of multi-faceted models of social achievement, in which mobility was to play a key role. Statutory hierarchy came under fire; social achievement found its expression and was measured in terms of the constant development of new projects. The challenges of an upwardly mobile

professional career changed as well. No longer was merely moving upwards within the hierarchical structure enough – one now had to be able to bounce effortlessly from one project to the next, 'surfing' as it were from role to role in an ever-changing environment (Boltanski & Chiapello, 1999).

Today we are witnessing the reversal of the role of movement in the social integration process; paradoxically, residential attachment and stability have come to symbolize elements of insecurity. Nowadays mobility is a must, not only for our professional lives but our private lives, leisure activities and growth as individuals as well. Mobility no longer implies mechanical movement or even moving a great deal but rather the ability to change and adapt.

Radical though it may be, this social change (described by some as second, or reflexive, modernity) has gradually rendered a number of the suppositions and hypotheses around which work on mobility has been developed (and divided) obsolete. It has also made developing an integrative approach to assembling the scattered pieces of the mobility puzzle more difficult.

2.3.2 The need for an integrated approach to mobility

At the beginning of the 1990s the call for a broad and multi-disciplinary approach to mobility – which became increasingly pressing toward the beginning of the new millennium – was finally heard, supported by several arguments in its defense. The first had to do with the need for a conceptual split between movement and mobility. Research on different forms of spatial mobility had often focused on movement, thus inferring a link between mobility as movement *and* change. The 90s witnessed a gradual division of the two phenomena (Kesselring, 2008). The first however was not necessarily a good indicator of the second insomuch as speed was concerned; distance was no longer a guarantee of a change of scenery. Business travelers, who trot the globe from Sheraton to Sheraton and from conference center to international headquarters, are emblematic of this relationship to space; their travel has little, if any, relation to 'others' or otherness. As a result of such globalization phenomena – distance alone having become a poor indicator of our relationship to otherness and change in general – we are currently witnessing the de-coupling of these two notions. Along these same lines we have also observed that with the arrival of the Internet and mobile technology individuals are so frequently interrupted in their daily activities that they in fact change roles countless times a day without ever moving, All of these facts point to the importance of conceptually 'un-gluing' movement and change.

The second line of argumentation concerns the overwhelming emphasis on rational economic action in spatial mobility analyses. In the previous section we raised the point that many studies on spatial mobility assume the individual's behavior is rational and that mobility behavior is contingent on money and time,

which is why international migration is seen as a reflection of the global economic context and real estate prices are a decisive factor in residential mobility. Nonetheless the increase in alternative forms of movement proves that economics in fact mix with a great many other factors (reflexes, routines, habits, convictions and values for instance) when it comes to explaining mobility choices.

Daily mobility analysis is unquestionably the area where this debate been taking place the longest and most heatedly. The so-called 'classical' method, developed in the 60s as a planning tool, was used as a base paradigm until only recently (Jones, 1979). Founded on the postulate of the user's instrumental rationality, it hypothesizes that individuals make successive, independent choices each time they move – choices such as whether or not to move (and thus location and type of housing), destination, when to travel, mode of transportation and itinerary (Merlin, 1985). Although this postulate created a link between choices in terms of time scheduling, the classical method treated choice as autonomous, with each choice becoming the object of a specific model.

In general it appears that daily mobility practices are determined by individual lifestyles and become a factor of internal differentiation (in most cases unrelated to income) among the middle classes (Dupuy, 1999). Commuting by bike, living in an old working-class neighborhood and vacationing in the Ardèche for instance are all forms of social distinction, or as Bourdieu might say, ways of 'distinguishing' oneself and expressing one's values and opinions. Fully appreciating such phenomena demands a comprehensive approach that fully explores these logics of action. Clearly, modal choice can be motivated by factors entirely unrelated to efficiency: we choose to take the bus or subway because it is more environmentally friendly or simply because we do not like driving. Modal choice can also be a matter of habit: if we take public transportation everyday we will most likely continue to use it, even if our situation changes or the transportation itself becomes less accessible. Although it may mean an increase in travel time, an individual often continues to use public transportation after a move because it allows him or her to remain within their personal comfort zone.

The third argument has to do with the limitations imposed by the fragmenting of mobility analyses. On one hand this division renders such analyses ineffectual in dealing with any topic falling outside the set framework, despite the fact that the four main types of mobility (daily, residential, travel and migration) largely constitute a system in themselves. On the other hand the interface between these different forms and players' expertise has led to a great many changes with regard to the study of mobility, including the conceptualization of 'hyper-mobility,' which is why the compression of space and time upsets the balance between daily and residential mobility, and why new modal forms emerged in several European countries including Holland, Belgium, Switzerland and Germany beginning in

the 90s. These new forms of long-distance commuting and weekly commuting fit poorly into the already-established models of spatial mobility (Schneider et al., 2002; Meissonnier, 2001). Weekly commuting (whereby individuals split their time between two residences often several hundred kilometers apart mostly for professional reasons) is certainly the most telling example; it is not daily mobility in the strict sense of the term as it implies spending the night somewhere else; nor is it residential mobility as this supposes commuting; and it is not travel in the touristic sense because of its repetitive, routine nature (usually weekly). Treating such burgeoning forms in a useful way means developing a broader and more integrative definition of mobility.

A fourth argument concerns the preconceptions that often surround the understanding of mobility. Whether defined as movement or change, mobility is often implicitly considered a positive social phenomenon and an indicator of societal health. Many analyses equate a just society with one in which people are professionally mobile and conclude that rapid, widespread movement is a sign of freedom of movement in time and space. In Western society in particular mobility is perceived as a positive value, often associated with the notion of freedom or, more specifically, emancipation. Organizations in defense of the automobile have had their say in the matter: for them, the car is an unequivocal vector of personal freedom. Several authors rightly warn against such positivism and claim that mobility is fundamentally ambivalent (Bauman, 2000).

This observation of faster-paced, further-ranged movements alone, however, does not explain their *raison d'être*. For instance, it is not because we do most of our commuting by car that we actually prefer driving to other modes of transportation. Nor can we assume that an individual wants to live in the city simply based on the fact that he or she lives in one. Tackling the links between the speed/space of movement and freedom in space/time means analyzing not only actors' intentions but also the complex web of obligations and pressures to which they are subject.

Such limitations can be attributed to a lack of social science research in the transportation field. Between 1970 and 1980 transport and mobility research in France (as part of an 'action plan'), Germany and the Netherlands (thanks to an abundance of work on the topic) was significantly expanded upon. This research however remained prospective and did not itself lead to the formal modeling of transportation practices. To begin, researchers observed that rational economic models were not realistic and that understanding spatial mobility required an interdisciplinary approach. Therein lay the dilemma: either abandon an open approach because of its complexity and risk resorting to ideational oversimplification or broaden the scope of mobility and thus risk getting lost in the twists and turns of its complex phenomena.

2.3.3 Why do we move? That is the entire question.

Fundamentally, dealing with questions of movement and mobility comes down to asking why it is people move. We move to relax. We move for our activities. Transitioning from one activity to another often requires a change of role, state or even status. We move to be with a partner or following a divorce. Finally, we move simply for the sake of moving, like when we take a walk or drive. But when do we move to be *mobile*? And when are we mobile in our movement?

The dearth of social science research in the transportation field up until recently can be explained by the fact that the social demand for quality transportation has become greater, thus impeding application-based research in favor of theoretical thinking and innovative conceptualization. Incidentally this phenomenon is reinforced by the fact that transport research the world over is typically conducted by engineering schools.

Nevertheless, radical changes in how we move have greatly changed and are still changing the world – a world that is living what many social scientists call the 'mobility turn' (Urry, 2007). The mobility turn is at the heart of global change and touches every aspect of political, social and economic life. Practically speaking it has resulted in the unprecedented growth of transportation and telecommunications flows and thus the chronic congestion of highway, railway and airport infrastructures. Environmental problems have followed in its wake – from air and noise pollution to landfill waste – as have issues of energy consumption. In cities in particular, mobility is the cause of unprecedented strain on social and spatial cohesion, difficulty in managing cognitive information as well as a variety of other issues (intercultural tension, strife at the local and global levels, etc.). The study of the mobility turn has become the focus of a new wave of dynamic social science research in many English-speaking countries (Cresswell, 2006). With increasing work on such issues, transportation sociology is finally receiving the theoretical and empirical attention it deserves.

2.4 From mobility to motility

2.4.1 Mobility as a system: a starting point.

The preceding discussion illustrates that in order to advance our understanding of mobility we must use a holistic approach – one that integrates both its social and spatial dimensions. In their book *Spatial Mobility*, Michel Bassand and Marie-Claude Brulhardt (1980) laid the foundations for such an approach by defining mobility as *any movement implying a change in the actor's state*. By this definition mobility is both spatial and social, thus restoring its richness. The authors suggest that in order to understand mobility we must apply five methodological principles:

1. mobility must be seen as a complete social phenomenon in which the nature of society as a whole is revealed;
2. the approach we use must be interdisciplinary;
3. mobility must be analyzed at two distinct and irreducible levels – micro and macro;
4. flows *as well as* their determinants and consequences must be taken into consideration; and,
5. context is of the utmost importance in analyzing mobility.

This approach is an alternative to divying up the concept of mobility which, as we have seen, limits it to specific forms of movement. One of the most interesting aspects of research on mobility is that of observing the *interaction* of its different forms – interactions that may strengthen, replace or even change the forms themselves. Albeit stimulating, this approach nonetheless has two limitations.

The first has to do with the link between movement and mobility. By suggesting that we consider mobility as any movement involving a change in status or state, Bassand and Brulhardt's definition does not entirely remove movement from mobility.

In their conception (from the Chicago School), movement becomes mobility when it implies social change as well. Which is why Roderick MacKenzie (1927) contrasted *mobility* with *fluidity*, the former being event-based movement characterized by its impact on the individual's life trajectory, identity or social position (migration or the purchase of house, for instance) and the latter defined as movement that has no particular or lasting effect on the individual (such as buying a loaf of bread or taking a walk). Fluidity therefore has to do with the routine movements of daily life. We can go even one step further: movement in the physical sphere and the social sphere is not of the same nature and is not necessarily simultaneous, and movement in the physical sphere is mobility only if there is a change in social position. Social mobility requires no physical movement.

The second limitation is that of complexity. Applying the five principles means we must account for the influence of more interactions than is practicable (Tarrius, 2000). The main advantage to this kind of systemic approach however is that mobility can be seen as a unique phenomenon that is likely to manifest itself in different ways.

In response to these objections, Willi Dietrich (1990) suggested looking at the various forms of mobility as overlapping according to specific social temporalities (the minute, hour, day and week for our daily activities and roles; the week, month and year for travel; the year and life course for moving house and professional mobility; and the lifetime for migration and family history). These forms have reciprocal impact on one another; forms with longer temporalities (life course

and lifetime) have a systematic impact on those with shorter ones. After moving house, the arrival of a child or a job change, we naturally have different daily mobility patterns because the practical space of our daily lives changes. International migration not only changes *daily* mobility behavior but can also influence travel habits (visits to friends and family back home) and specific residential mobility patterns (a move to a furnished studio followed by the purchase of an apartment, etc.) as well. Thinking about mobility as a system organized around interlocking social temporalities and not merely as forms of movement allows us to considerably refine our understanding of these processes.

2.4.2 Towards a new conceptualization of mobility

From this notion of mobility as change – whose forms are temporally interlocking – and the knowledge gained from the research presented above, we propose to conceptualize mobility based on three analytical dimensions (Kaufmann, 2008):

Field of possibilities. Every context has a specific field of possibilities based on a variety of factors: existing road, highway and railway networks, airport platforms, local and regional telecommunications facilities (as well as plans for their future development), how they perform and their conditions of access; space and its use (urban areas, functional centrality, institutional lands, etc.); job market (training and employment possibilities, unemployment rate); institutions and laws that govern human activity (family politics, property and housing assistance, immigration policies). In short, the field of possibilities corresponds to models of achievement and the challenges faced by its members.

Aptitude for movement. Individuals and groups are characterized by their aptitude for movement within a given physical, economic and social context. The ensemble of these aptitudes may be described as *motility*. Motility is comprised of those factors that define an individual's capacity for movement, or being mobile (e.g. physical capacity, revenue, training, aspirations for a sedentary or mobile lifestyle, transportation and telecommunications systems and their accessibility, skills like driving or English for travel) as well as the conditions of access that make utilizing these offers (in the broad sense of the term) possible, aptitude (the skills required to utilize the offer) and enactment (using the offer to realize projects). Motility then is the way an individual or group takes possession and utilizes the field of possibilities with regard to movement relative to his personal aspirations and projects.

Movement. Movement is the idea of moving in physical space. This movement can be either directed between an origin and destination point(s) or a peregrination with no true origin or destination. Movement involves not only people; ideas, objects and information all move as well.

These three dimensions, when put together, are likely to produce motility, though we must not assume anything about the nature of their relationships with one another; just because a field of possibilities offers certain networks – however effective and accessible they might be – does not mean they will be utilized by the population. Likewise can highly developed motility in a given population serve to anchor it to an environment rather than empowering it to change. By the same token, just because a population moves a great deal does not mean its field of possibilities is favorable or predisposed to movement.

With such models researchers can investigate the relationship between the field of possibilities, motility and movement, with each context offering its own opportunities and conditions for mobility. City centers and suburbs differ greatly as do North and South countries. By differentiating movement and mobility and giving each its own meaning, we can better explore the effects of systematically uncoupling the two, particularly in regards to the following three optics:

Moving and being mobile. In this optic spatial mobility and social mobility go hand in hand, meaning that movement in the physical sphere is accompanied by movement in the social sphere. Highly documented in sociology, this perspective assumes as its model a society that is hierarchically organized (by region) as well as working knowledge of the different environments and lifestyles therein.

Moving without being mobile. In this second optic physical movement in no way changes the actor in terms of role, identity or social position (i.e. fluidity as described by Roderick McKenzie, 1927). Other than micro-movements like going to the store to buy bread, one of the most emblematic, widely-used examples is that of the businessman (cited earlier). While he moves *physically,* does his status change, in a world that offers few links to the outside world and otherness? Thus he remains confined to his professional bubble, changing roles so rarely that ultimately he becomes socially immobile.

Not moving and being mobile. This third and final optic involves change with no spatial component, including armchair travel – from the reader who mentally 'escapes' into the imaginary world of a novel, to the gamer who finds a niche on the Net that allows him to adopt a new identity, to the escape that television offers – even drug use can be qualified as a form of escape (don't users often employ the word 'trip' to qualify its effects?)

While such cases are extreme and rare, they nonetheless illustrate the importance of ungluing mobility and movement as doing so allows us describe a trip or set of trips in terms of mobility. Thus we can imagine movements engendering a great deal of mobility (change), such as moving to another country or region for a job, versus movements that on the contrary engender relatively little, like daily commuting by car from Geneva to Lausanne.

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2.5 The importance of motility

As Zygmunt Bauman (2000) noted, with the broadening of the scopes of movement and mobility, motility takes on even greater importance when it comes to economic and social integration. The first phase in this process has to a great extent introduced the notion of choice; as the number of choices increases, making the right decision becomes all the more crucial. Consequently, motility also takes on more meaning, allowing for creativity in the way we schedule our activities to organize our daily lives.

The second phase corresponds to the ever-increasing possibilities in terms of modes of transportation and, consequently, the way we live. Technological and social innovation is constantly changing the access and skills required for and enabling movement. The virtualization of certain services (postal and bank services, online reservations for train tickets, rental cars and planes, etc.) has changed both our ability to access them and the skills needed to use them. New forms of transportation (low-cost airlines, ride- and car-sharing services) respond to a latent demand, also altering access and requisite skills. Individuals are likely to use a new service provided they are pleased with the results and it is accessible to them both practically and financially (purchasing a computer, for instance, can facilitate making online ticket reservations).

Thus the individual or group has to constantly adapt to this changing context wherein motility has become a must with regards to social integration. The multiplication of possibilities and their evolution fosters creativity and new ways of doing things while the flexibility and adaptability needed to use them affect individual practices, thus changing the world little by little and reinforcing motility's impact on social integration.

Just as money is an economic asset, knowledge and its transmission are cultural assets (cultural in the 'cultivated' sense, not the anthropological one). Likewise networks of relationships are social assets. Motility is both mobility and one of its components. Individuals are endowed with varying degrees of motility; they are also endowed in different ways. Unlike cultural, social or economic assets, which refer to hierarchical position, motility refers to both the vertical and horizontal dimensions of social position, thus highlighting not only new forms of social inequality but also making it possible for us to distinguish between different lifestyles based on an individual's relationships to time and space. The ingenuity of the solutions we find to a given problem often depends on our life circumstances and, more simply, on how we execute plans. Thus motility is instrumental in the formation of the many spatial and temporal webs in which find ourselves caught.

Motility's role in the social integration process stems most notably from the fact that, despite our many ways of getting around, success is largely contingent on physical co-presence. For a great many activities (team activities, negotiations

in the workplace, cohabitation, quality family time, dinner or a movie with friends or legal obligations such as signing a contract) it is compulsory (Urry, 2007a). Face-to-face contact nonetheless remains the cornerstone of human interaction, as Georg Simmel noted at the beginning of the 20th century. Therefore in order to integrate, we must find ways of bridging physical and geographical gaps.

2.6 Measuring motility

How do we measure motility? As we have already seen mobility largely hinges on the conditions of access necessary for utilizing an offer (i.e. the skills required and ability to use the offer to realize personal plans and projects).

Scientific literature, which underestimated the importance of this notion, tackles the question of motility from three specific angles – access, skills and aspirations – thereby fragmenting motility into separate dimensions. Such an approach lacks the ability to appreciate the complexity and intricacy of the overlapping nature of these differences, as we will have a chance to see in the following chapters.

2.6.1 Access

Many works on accessibility show that in modern societies access is becoming increasingly important (Castells, 1998; Bauman, 2000; Urry, 2007). Other authors like Jeremy Rifkin go so far as to make it the organizing paradigm of future capitalism. Rifkin tells us that the 'dematerialization' of property and capital, the depletion of reserves (food, energy), the decline of fixed income, the increase in property time-sharing and the privatization of public spaces like shopping centers has made the issue of access a central focus for Western societies, bringing us to a new era in which networks will replace markets and access property (Rifkin 2000: 10).

Socio-economics and geography have long looked at both the monetary and temporal dimensions of the issue of access.[2] To begin, economically, access functions based on price, thus coming down to a question of revenue. One example, using the example of inaccessibility due to price mechanisms, is the desire of individuals with modest incomes to own a home. Unable to do so – priced out, so to speak – instead they tend to live in collective dwellings (public- or privately-managed apartment buildings). Another example is commuters that work in city centers and use public transportation to get to and from work though who, given the choice, would rather drive but cannot due to prohibitive parking

[2] Access naturally has a physical component. Scantly explored in the social sciences until recently, access most notably refers to the question of individuals with limited access.

prices – cost again acting as a constraint. In this sphere we also find residential assignment phenomena, which have largely been tackled in works on city suburbs. These studies show that among more economically limited households, many wish their living situations were otherwise. These findings go hand in hand with works on automobile dependency among poor households (Froud et al., 2005), which show that lack of access to a vehicle greatly limits daily activities as well as access to the job market (and thus mobility as we have defined it). And so in the United Kingdom for instance, young people with driver's licenses are twice as likely to find jobs as those without. By the same token twice as many 'unvehicled' individuals said they had trouble getting to see their friends (thus access) as those with vehicles. Consequently many households nonetheless have cars though they cannot really afford to do so (Froud et al., 2005).

Time wise, the notion of access was the subject of many economic and geographic investigations in the 70s, following the development of time geography and analyses of metric temporal logic (Hägerstrand, 1975). These works stressed the role of time in human activity, particularly with regard to access, and were largely based on the notion of accessibility. Transportation services and infrastructures have service schedules that are in all likelihood experienced as an imposition by users. Having a flexible work schedule for instance makes avoiding rush-hour madness possible, whereas working nights typically means commuting by car (and makes having a social life difficult).

Recently a series of studies on time and access conducted in England (Cass et al., 2003; Shove, 2002) have shown that an absence of routine in an individual's social life makes getting organized (and thus having access) extremely difficult. These studies also show that access is commonly viewed in terms of public function (work, schools, hospitals and other public services and facilities), not private/commercial facilities or socially speaking (maintaining of friendships, family life or day-to-day social relationships) (Urry, 2007b).

2.6.2 Skills and knowledge

The notion of skill has become central in the sociology of education, gradually replacing that of knowledge. In this somewhat related domain, social mobility analyses were skills-based, making social and cultural capital (two types of skills) key ingredients in the quest for upward social mobility (Wright, 1992). Over the past decade the notion of skills, around which a great many issues linked to the growing demand for responsibilization and flexibility have taken shape, has gradually become a guiding principle in the social sciences. This sudden interest in skills can be explained by the rising trend in pragmatic sociology, whose strength is the fact that it takes the diversity of actors' skills into account (Genard, 2008).

Many studies on this theme teach us that being creative and knowing how to tweak the system to our advantage vis-à-vis movement and mobility requires a whole range of skills that are quickly becoming a fundamental part of our daily lives. These skills are in large part based on our ability to plan, organize and even improvise short- and medium-term activities within a temporal and spatial framework and learn how to be comfortable in our surroundings and the places we frequent on a daily basis. And yet to be honest, some individuals are more equal than others in this regard; such differences – stemming from physiological and psychological capacities and ranging from the ability to get one's bearings, handle stress, use different means of transportation and communication, visualize and plan out a day – naturally lead to inequalities.

Research has also shown that the skills needed to move can become the poor man's weapon, making up in terms of access to communication and transportation networks for a lack of income. The ability to juggle special offers on mobile telephones, low cost airline or train tickets, last minute vacation deals or any other offer that makes getting around for cheap possible in a way compensates scant financial means with mobility. These skills however suppose the ability to both predict and react.

Let us conclude by noting that all of these findings suggest that the motility skills of which we have spoken are based to only a small degree on formal training or education, and for the most past are learned outside the classroom.

2.6.3 Desires and aspirations

Works on aspirations (mostly by disciples of Paul-Henry Chombart de Lauwe's work on the importance of aspirations and largely based on the notion of experience) have also increased in popularity. As such, François Dubet (1994), in observing the undoing of the logics that dictate action, appealed for the sociology of experience, or "the sociology of behavior dominated by the heterogeneity of their basic principles and the acts of individuals who must give meaning to their practices within this heterogeneity," (Dubet, 1994: 15). The idea of experience defined in this way allows us to link a theoretical project with the empirical sociology of action. Founded on a combination of logics of action, the idea of 'experience' is characterized by three key traits: 1) the heterogeneity of the cultural and social principles that organize behavior, which can come from the instrumentality or integration of values, the establishing of patterns or the affective, 2) the critical distance individuals establish with regard to their practices and opportunities that present themselves and 3) the absence of a central organizing principle in the building of the social (Dubet, 1994: 16-19). In this perspective the acquisition of

motility and its transformation into movement and mobility is built principally on individuals' aspirations and future plans, a theme that echoes works on access.

One of the obstacles that policies aimed at providing equal access to public transportation in disadvantaged neighborhoods runs up against is precisely related to the planning dimension. While getting out of the neighborhood has undoubtedly become easier, as a consequence of more cost-effective, reliable, high-performance transportation options, the question still remains: where to go? And what to do? And why? (Urry, 2007b). Many studies on underprivileged populations show how difficult it is for certain individuals to "pull themselves out" of their neighborhoods, for realizing plans requires movement (Le Breton, 2005). Thus having plans (or not) stems from a form of inequality, which Raymond Boudon cited as one of the root causes of inequality in terms of professional mobility, that now dates back forty years.

2.6.4 Mobility as a system

The examples above suggest that as access, skills and aspirations are inextricably linked they do not provide adequate analytical differentiation to measure motility. Having aspirations, plans and projects – like access – is a skill; acquiring skills and giving oneself the means to gain certain types of access are aspirations. Having skills gives us access. In the same way having aspirations can be seen as access as well.

Following this observation John Urry (2007b) suggests combining these skills under the blanket term 'access' and then specifying them as 'network capital.' We propose leaving this point open for further empirical discussion in the chapters to follow. What *is* crucial to maintain, however, is that an individual or group can have more or less motility and, more importantly, different, often incomparable *types* of mobility – in other words a multidimensional reality. Going one step further, we posit that this multidimensionality can result not only in a blend of individual aptitudes for movement, but also that motility allows individuals to be sedentary *as well as* mobile.

To explore these two dimensions let us look at several interviews from recent studies (Flamm, 2004; Kaufmann, 2008).

To begin, with regard to motility, let us consider the accounts of two women (interviewed by Michael Flamm). Both have highly developed motility and move extensively and in complex patterns that structure both time their schedules and activities – and thus are mobile, as we have defined it.

The first is a young woman employed in the hotel industry in Basel. A native of the Geneva area, she has worked in several Swiss and German cities over her 10-year career and has as such experienced immigration. Her partner, who also works in the hotel industry, lives in Zurich; she often spends weekends with him there. She enjoys traveling to faraway destinations and does so regularly. She lives

close to her workplace in the center of town, which is especially convenient given her erratic schedule. She likes walking to work; she sees it as a breath of fresh air in an otherwise hectic day. She is also highly aware of the sensory qualities of the urban environment around her, which she imbibes on a daily basis as a way of relaxing. She chooses not to own a car.

The second is an executive in her fifties who lives in the Lausanne area. Since her move with her husband (also an executive) closer to German-speaking Switzerland, where he often works, they have both become long-distance commuters. They have a son who lives abroad. The couple has rather developed leisure mobilities in the evenings and on weekends; thus they practice intermediate forms of mobility. As a part-time employee (80%) she has a four-hour daily commute on public transportation. She considers the two hours she spends on the train 'free time', available for whatever opportunities or obligations might come up during her trip (calls, etc.). This openness to opportunities often results in her changing plans throughout the course of the day, especially her social schedule. She owns a car.

In both cases, these individuals' motility is highly developed: access has been chosen, their skills are in keeping with their lifestyles and their ability to plan allows them to seize different opportunities in a comprehensive, flexible way. While all of their motility potential has not been transformed into movement, as certain skills or access have not been used or taken, these women, who describe themselves as free, for the most part move in a way that is coherent with what they want. In this case it is difficult to say which one has greater aptitude for movement, as motility is incommensurable and – upon closer inspection – ambivalent for two reasons. To begin, both value their careers. Insomuch as employers demand mobility of their employees (especially managers), having a wide range of mobility options is in some ways an obligation for those seeking a career. Moreover, considering their demanding professional schedules, the congruity of their motility and movement is the only 'freedom' these individuals have when it comes to running their lives. The desire to make daily commutes 'meaningful' makes sense given our busy schedules; it is a way of taking a breather – a space of freedom in our daily lives. At the same time the second woman's flexibility is in many respects the very thing that allows her to find some freedom in a complex situation of overlapping spheres of activity.

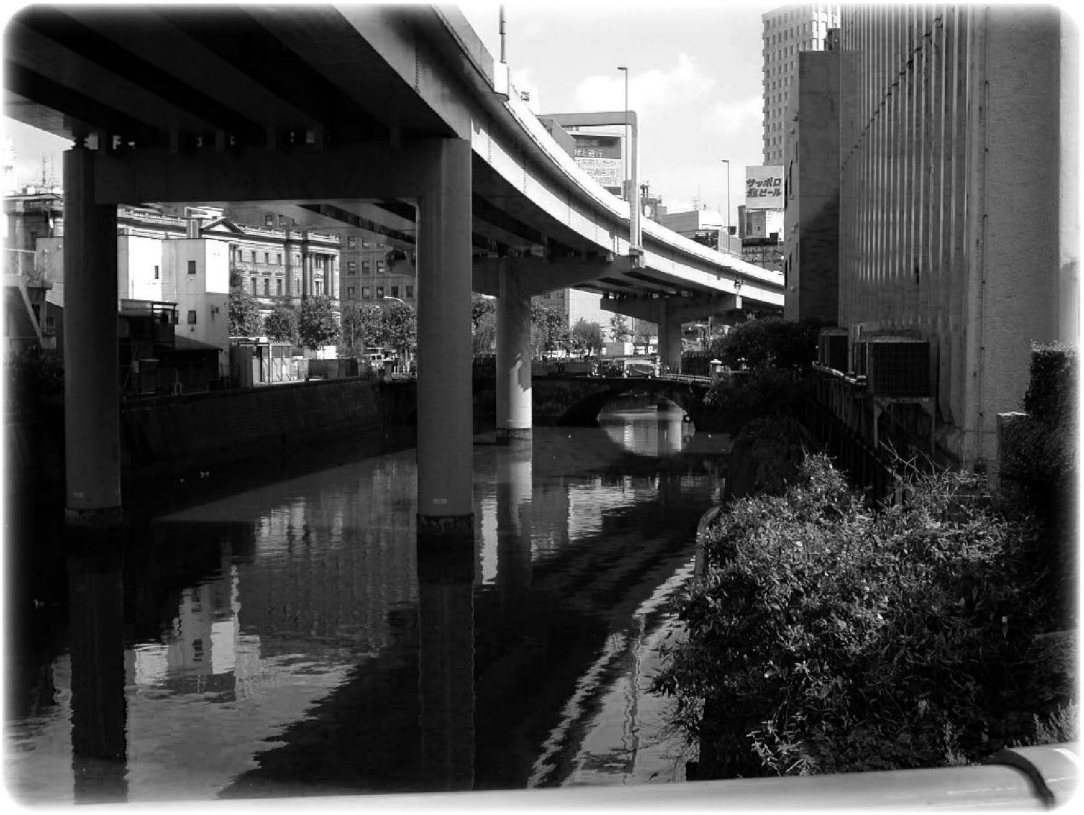
The so-called freedom of our other long distance commuters comes back to the question of how we choose to live our lives. The degree of congruity between motility and mobility is often the result of individual priorities and the allocating of resources based on these priorities. Some give themselves 'freedom' of movement while others use their room for maneuver differently; this does not mean however that those who use theirs in other ways are less 'free'.

In addition to differentiating movement and mobility our example, which dovetails with other findings beginning with Montulet's works (1998), aptly illustrates the ambivalence of mobility with regard to freedom. Highly mobile individuals – meaning those who move in many ways and for many reasons (thus implying a change of roles) – are often caught up in a career dynamic. As we learned from our two interviewees, those who use the speed potentials of technology the most are those who put their job and career first; their strong degree of mobility is often a more or less direct response to the flexibility their companies demand of them.

The most innate and reversible forms of mobility that typically result from the compromise between the professional and personal spheres are experienced more like submission than escape. Thus it seems that rapid commuting over great distances is a rite of passage of social integration. These forms of movement – made possible by technology – are increasingly becoming a prerequisite for combining the different spheres of social life. In certain respects they have undoubtedly freed us of some of the constraints of daily life, but have simultaneously given rise to new ones. By allowing us to combine and conciliate what was once irreconcilable they have broadened the range of possibilities but also made them interdependent. Those for instance who use speed-enabling technologies the most are often those who lead a daily life that is fashioned by multiple constraints and are obliged to travel the greatest distances in the least possible time. When given the choice most choose to stay close to home, appreciating the idleness of strolling through the neighborhood; thus is the number of kilometers or speed traveled a poor indicator of this freedom. The 'freest' movements are slow-paced and take place close to home; they offer sensory qualities and a sense of meaning.

2.6.5 The field of possibilities as perspective

Finally, in this chapter we saw that the links between freedom and mobility are more dependent on the field of possibilities and actors' motility than on movement itself. In this perspective a context that allows the greatest freedom is one that offers a field of possibilities that is flexible with regard to movement and mobility and can be 'updated' in a variety of ways – a context in which pluralism is possible; in other words the very opposite of a world in which everyone is moving faster and further (or dreams of doing so) and the slow and local are overwhelmingly rejected.



Tokyo 2008 - Jérôme Chenal

Chapter 3

Describing the city based on mobility

3.1 Introduction

The city can be defined in a general and schematic way as the meeting of density and diversity (Lévy, 1999). By density we mean both the extent to which a city is built up *and* its human density; when we speak of diversity we mean its substance (i.e. the ensemble of its services, its permanent and temporary populations (those who work in the city but do not live there for instance), the morphology of the built environment, public spaces, technical and local networks. This definition – both minimalist and consensual – will serve as the jumping-off point for this chapter. Therefore a city's unique diversity and density is the result of the layout of its morphologies, services and lifestyles – three of the ingredients we cited earlier as central to the changes in urban dynamics today.

The gradual disappearance of the fixed boundaries between city and countryside that have been replaced by urban sprawl is an indication of changes in the links uniting service infrastructures, urban morphologies and lifestyles given the multiplication and, more importantly, diversification of speed potentials. Motility – nowadays a primordial skill for actors when it comes to realizing plans in a world of hyper choice – is the result of this multiplication and diversification. Following this approach makes broaching the idea that a city can be endowed with more or less mobility (mobility as we have defined motility, relative to change) and thus be more or less city, in much the same way that people are society.

In this chapter we will argue that the layout of the service infrastructures-urban morphologies-lifestyles triptych and their transformation over time

depends implicitly on the mobility of actors and, what is more, defines a city's receptiveness to their plans and aspirations. More specifically, places (including urban areas) can be understood and read based on the movement and mobility of actors, or as the result of the blending of different actors' (individual and collective) motilities with the receptiveness with which they are met in a given environment.

In order to use this approach we must have a clear idea of what constitutes an environment (meaning a city, region or territory), how it is built up over time, what exactly makes a city a city and how that has changed. Such will be the goal of this chapter, also allowing us to analytically define the modern city which, contrary to what certain authors suggest, has not dissolved into the urban (Le Galès, 2002; Ascher, 1995). A simple analysis of actors' motilities and their impact on the surrounding environment will help us restore the concept of city to its rightful place.

3.2 Defining the territory

Territory results from the meeting of actors' motilities and a given environment's receptiveness to their plans and aspirations. Territories are thus built up over time through a gradual process of sedimentation of successive generations, groups and individuals.

The notion of territory here is by definition strongly influenced by actors' activities. Were we to track each dimension of a given activity through time and space we would discover its 'domain', meaning the environment in which the activity takes place. For our purposes here we propose the following definition of territory: A physical setting that allows for the development of specific activities or experiences. By setting we mean the equipment (material or otherwise) that defines a given action, makes it possible and is receptive to it. By linking action with the physical space, environment becomes a framework for both the spatial organization of human activities and the political organization of societies.

Before discussing how we will use this notion of territory, we will briefly examine the physical approaches that commonly determine an environment's spatial characteristics.

In geography there are two main (and competing) approaches to territory. The first views it as a materially or symbolically closed space that is above all socially informed – a "topographical metric space" (Levy, 2003). This approach distinguishes between environment and network, both of which are seen as distinct ways of organizing space. A second, broader approach defines territory primarily as "the arrangement of material and symbolic resources capable of structuring the practical conditions needed to support the existence of an individual or a social community" (Debarbieux, 2003). Consequently spatial continuity, networks and

territory can all be dealt with in the same way when it comes to different ways of controlling and organizing the various entities that form a given environment.

By applying both approaches we can distinguish between two ideal types of territories – sedentary and nomadic – each of which reflects a way of organizing human activity in time and space. A sedentary environment (much like closed-space territory) is defined by its borders and governed by authorities. A nomadic territory on the other hand is oriented towards actors and is built based on their movement. By this definition a person moves with his environment and, like a nomad, his presence in a given place informs and changes it depending on the social habits he develops there and objects he encounters along the way. The main advantage to this definition is that it treats the physical environment as an attribute of both physical space and the individual, thus putting our appropriation of space and ability to move in it at the heart of our debate. Appropriation is likewise at the heart of the sedentary territory. Understanding the environment as a continuous, clearly-defined space is historically linked to the desire to increase control and influence over the entities that exist within it. A sedentary territory can thus be seen as a kind of spatial/temporal arrangement of the various entities that make specific activities possible.

As we suggested earlier the organization of activities in the physical sphere has not disappeared; the scales and organizing principles associated with them have however become more varied and enmeshed. Research on territories today must therefore thoroughly explore the organization of the activities and experiences that take into account actors' existences and realities.

3.3 Realms of human experience and societal organization

In order to analyze the link between human activity and territory in a systematic way we must return to the four key dimensions of human experience: 1) dwelling, 2) meeting, 3) using, and 4) consuming (Pattaroni & Kaufmann, 2011). Together these four dimensions offer insight into the depth of human experience – from the most personal to the most public – both of which in my opinion are needed for a quality life.

Furthermore each dimension combines specific ways of engaging with other individuals, the material world and how they are organized in space, meaning each corresponds to a specific dimension of territory (Breviglieri, 2002). As such, dwelling corresponds to the dwelling space, meeting to the social space, using to the functional space and consuming to the commercial space.

- ***Dwelling space.*** Upon closer examination we see that this territorial dimension actually spills over into lifestyle in the larger (reticular) sense, and includes those places where the individual feels comfortable and is able to

establish the routines necessary for his or her own 'ontological security'.[3] This environment does not necessarily adhere to the boundaries of public and private, nor is it confined to the four walls of our homes. Rather it has to do with the ability to be familiar enough with a given environment to feel at home and safe in it. The quality of this environment and the way actors engage with and within it are vital to the delivery of this 'commodity'. Understanding dwelling space is crucial for understanding the tensions that arise from individuals' need to inhabit several places (long-distance commuters, seasonal migrants, the homeless, poor city dwellers, etc.) and their ability (or inability) to create ontological security over time.

- ***Social space.*** The space of interpersonal relationships (cohabitation, neighborliness, social networks), meaning the places where people meet, socialize and the way they communicate, allowing them to maintain close ties even over long distances. The networks in this territorial dimension vary depending on the individual. These relationships (and the resulting territory) are organized around the notion of reciprocity, a prerequisite for interpersonal relationships vital to the development of solidarity or what we now call 'social capital'. Increasing social capital thus is linked to the development of specific environments (i.e. settings that offer the relationships and skills necessary for the acquisition of 'social capital'). For individuals without such skills or qualities[4] the social environment can be a space of exclusion.

- ***Functional space*** brings together the elements needed to ensure that everything runs smoothly (power supply infrastructures, sanitation systems, etc.) within a given environment. Standards and expertise are crucial, and the space in question often goes beyond the city level (power supplies, for example). Within this space we find "qualified" individuals – the users of the various services and technical infrastructures and the professionals who develop and maintain them. These entities are organized by standardization processes which improve the efficiency of the entire system. This territorial dimension should allow individuals – who have no real need to know one another – to coordinate so they can pursue their own projects. It is also a space of distraction or challenge for those who cannot access or utilize its services and infrastructures (due to a lack of physical or cognitive abilities, financial means, discrimination, etc.).

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3 For more on ontological security as a condition for self-confidence and autonomy, see Giddens. For an approach that links this concept to spatial and material conditions and specific logics of action see Marc Breviglieri's thought-provoking work (Breviglieri, 2002).

4 Though an individual may lack social skills (physical abilities, education, the ability to integrate into another culture) he can also be denied access to social relationships because of his status (gender, ethnic origin, caste, economic bracket, etc.).

- ***Commercial space*** exists alongside (or rather is enmeshed with) the functional space of urban life. Its networks include land valuation and construction as well as those networks where the international and national exchange of lands is subject to legal regulation – with developers eager to maximize profits, tenants and home owners looking out for their own interests and homes (i.e. commercial objects with a price that can be bought, sold or rented). The commercial dimension of territory is also the space in which economic production is distributed and competition (even at the international level) is coupled with the network of consumer space. This network of people and objects, ordered by the principle of competition, is believed to generate higher value solutions and thus prosperity.[5] This space also imposes new barriers which can in turn result in alternative spaces of informal economy and lifestyles.

Put together, these four dimensions constitute the substance of a given environment, with each dimension being made up of material and conventional elements that make certain activities and experiences associated with them possible. They also contribute to different types of commodities, ranging from the most private (comfort, ontological security) to the most public (efficiency, competition, safety). They also differ in terms of their degree of formalization and the skills individuals need have in order to use and enjoy them.

The material nature of these four dimensions can be affected by specific actions at both the individual and collective levels. This classification should ultimately help us differentiate between the many levels and forms of public action by taking the diversity of human experience into account.

In the past regional divisions and homogenous lifestyles enabled us to identify and link place with activity, thus facilitating context- or activity-based urban planning. Sound urban planning was based on a somewhat arbitrary definition of 'the good life'. Diversification of lifestyles due to motility, changing ideas about what a 'good life' actually is and the gradual dissolving of traditional frames of reference with regard to activities renders urban planning attempts inadequate and ultimately obsolete (Florida, 2005). In other words the bursting of the Russian doll that represents regional organization makes it no longer possible to consider the four dimensions in terms of interlocking, closed spaces, thus raising the question of the co-existence of different functions and uses in a single urban space (Lussault, 2007).

Considering actors' different logics of action and the conditions needed for their success is essential when studying the physical restructuration of lifestyles,

[5] For a general theory on the ordering principles of people and objects in society, see Boltanski and Thévenot, 2006.

changes in the urban order and new processes of exclusion and segregation. Limiting the analysis of urban policy to planning principles and public debate is grossly inadequate.

Exploring the relationship between space and experience allows us to distinguish the different types of organization among the four territorial dimensions, ranging from functional use of the city to friendly interactions in public spaces, that vary according to the skills they require and their context. Actors' plans and aspirations develop based on this diversity.

We have now arrived at the heart of the issue: an environment's receptiveness to actors' projects and aspirations. We can see the four territorial dimensions as the meeting of motility (which is constantly changing and evolving) in the form of movement and the receptiveness with which this movement is met in the territory. The changes that Europe alone has seen over the past fifty years – largely considered the result of the new functional configuration of lifestyles – include morphologies and urban services can be tackled in even greater depth using the actor-based territorial conception (i.e. motility and its translation in time and space) and that of receptiveness we have just developed. Let us now explore these ideas.

3.4 Actors' motility and its translation in time and space

Motility highlights the many possibilities with regard to the relationship between movement in space and social change, as we saw in chapter 2. This diversity has increased considerably over the past few decades, spurred by advances in telecommunications and transportation technology. Nonetheless we must be sure not to analyze in a deterministic way here; the fact that a technical solution *exists* does not mean people use it. In other words describing spatio-temporal practices does not offer us insight into the reasons for them.

3.4.1 The possibility of taking possession technical systems

A person who works 80 kilometers from home and commutes by train everyday is by definition sedentary residentially speaking – but one that moves a great deal and whose motility is more strongly geared towards movement than mobility. Thus he is able utilize the transportation system (and his travel time) in different ways. Let's take as another example a company (a collective actor) whose development strategy consists in expanding the market for its existing products – a strategy typical of the automobile industry in emerging economies over the past fifteen years or so. Here too the company's motility consists in movement, in this case by broadening its markets at the spatial level rather than actually changing its products. Its strategy is thus one of movement, not mobility and unlike our first

example not dictated by transportation possibilities thanks to other possible strategies.

With regard to choice for adopting technical systems we can also find examples of motility geared towards mobility. A family that chooses to live in the city so as to enjoy its wide range of conveniently-located services and facilities essentially has motility oriented toward mobility. By the same token a company whose development strategy consists in using technology to improve its products also has mobility-oriented motility. In both cases rapid transportation serves not as a means of escape but rather as a way of willingly investing in proximity.

Actors' choices when it comes to utilizing these technological possibilities are critical to the composing and structuring of the environment. Two aspects of our relationship to space and time determine how motility comes to be and how it is used: attitude towards connectivity and feelings about reversibility.

3.4.2 The mixing of models

Widespread use of telecommunications and motorized transportation has led to changes in the way individuals integrate socially, meaning their ability to 'move' in space via a technical intermediary. Actors are largely keen to understand, appropriate and make use of these new technologies. Connectivity marks the transition from social integration – based on differentiations of space and time – to a more 'mixed' model (Levy, 1999; Lussault, 2007) and is closely linked to the increase in daily commute distances and resulting 'archipelagization' of lifestyles (Larsen et al., 2005). Until the 1960s modern societies were characterized by the separation of functions in the social space (gender division in the workplace, the importance of socio-professional categories to individual identity, etc.) and physical space (spatial differentiation of activities); changing roles typically meant changing locations. This model has now become more or less obsolete, leaving room for a greater spatial and temporal superposition of roles in its stead (Larsen et al., 2005). The gradual erasing of gender roles (women's work, 'stay-at-home' dads, etc.) and changes in the way free time is both seen and used has broadened social mobility on the horizontal axis, all the while without necessarily increasing spatial mobility. Many people use telecommunication and transportation technologies to increase the number of spheres of activity in their daily lives and the speed with which these activities can be done. The home for instance is no longer just a domestic or family space; more and more is it a space of leisure and work (thanks in great part to home computers and the Internet). As a result a kind of melding of public and private spheres and a telescoping of free time and constraints ensues. This dividing of spheres of activities also results from the interrupting of one activity by another, an increasingly frequent issue in the age of cell phones.

Nonetheless one of the most flagrant examples of this superposition is the installation of video surveillance cameras in daycares in the U.S., whereby parents can observe their children at any moment from home, work or wherever they may be via Internet.

Spatially speaking, connectivity happens both near and far – in other words in the home via information technology as well as in this archipelago of spaces united by the speed with which transportation gets us from one place to another.

3.4.3 Research of reversibility

The use of telecommunications and motorized transportation has also led to the reversal of movement and mobility. Like connectivity, actors often take advantage of this potential by using transportation and telecommunications technologies to nullify the effects of travel and commuting on their social lives.

More irreversible forms of movement (migration and relocation) are now being replaced by more reversible ones (daily mobility, commuting and travel). Examples of such are rapid transit and telecommunications systems, used by those who live far from their places of work as a way of avoiding relocation (Schneider et al., 2002) or other types of multiple residency we have already seen (when the distance is too far to travel on a daily basis) (Meissonnier, 2001). Such forms of substitution replace long spatial temporalities with shorter ones. More important still is how traveling and commuting impact social relationships. By traveling instead of emigrating and commuting instead of relocating, networks and social attachments can be more readily maintained. Studies on mobility also emphasize a reversal of the forms of mobility themselves. Now more than ever are we able to limit the impact of distance, and those who choose to emigrate can still keep in touch with families and friends by phone or email (Kesselring, 2005). And so emigrating is no longer the definitive break it once was – even less so with the speed potentials of modern transportation, which make it possible for us to travel and/or receive visits. By the same token relocation often goes hand in hand with habits and practices transposed from the old neighborhood and former lifestyle to the new one, thus making it possible to a certain extent *not* to relocate. Reversal also has to do with commute time; nowadays many people use it as a social time in its own right, or as a time for work or other leisure activities.

More or less connectivity and the degree of reversibility make describing motility in terms of *movement* and *mobility* possible. Scientific literature on this topic, while still in its infancy, nonetheless indicates that connectivity and reversibility redefine these highly-differentiated movement- or mobility-oriented relationships to space.

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3.4.4 Three logics for the constitution of social network

At the individual level this results in the identification of three logics of spatial constitution of social networks:

A logic wherein maintaining social inclusion is very much rooted in the local, goes part and parcel with motility aimed at nullifying the effects of movement on inclusion as much as possible. This behavior results in a fair amount of residential sedentariness and daily "hyper-commuting" practices (Schneider et al., 2002, Meissonnier, 2001). In this context, social networks develop only marginally and as a result of the commuting or travel experience itself. Connectivity thus serves to reverse the effects of distance and limit mobility while actors try their best to neutralize the effects of their movement on social inclusion.

A recursive logic in which each travel or commute experience serves to enrich the actor's social network by aggregation, thus changing the actor, social attachment in this case is, spatially speaking, multiple. Motility here is geared towards the building and maintaining of new relationships over the course of these movements, in spite of distance, by staying in touch via one or multiple modes of communication (Kennedy, 2004; Kesselring, 2005). The logic in this case is contrary to that of the first example: opportunities for connectivity and reversibility serve both the ability to be mobile (by allowing the individual to develop his or her social network) and moving to maintain established relationships (moving so as not to have to change the fabric of one's social relationships).

A logic whereby each movement in space is accompanied by a spatial recomposing of the social network and the old network is gradually abandoned, mobilized motility therefore means being able to uproot and re-root elsewhere (Tarrius, 2001). The preferred forms of movement in this instance are residential mobility and emigration (i.e. irreversible forms). Connectivity and reversibility are to some extent rejected as the adequacy of movement and mobility is complete. Movement in physical space in this logic is inevitably mobility.

Regarding attitudes towards connectivity and reversibility it is worth noting that the selection of a certain type of mobility over another is *not* necessarily a genuine choice; room for maneuver is oft times limited. By remembering this and maintaining it as a central focus in our approach we can ward off theories heralding the radical fluidification of Western societies, which are unstratified and function on an individual basis according to the binary modalities of inclusion and exclusion (I am thinking in particular of the works of Bauman (2000) when he compares the dominant, who have great mobility, with the dominated, who are very much rooted locally).

3.4.5 The material sedimentation of action

As their role in determining the density and diversity of an environment is so instrumental, different mobilities can in fact produce different sorts of cities and different kinds of urbanness. Nevertheless we must try and keep a unilateral vision of the effects of these different forms of mobility on a given environment, which links movement with weak mobility to something anti-urban and movement with strong mobility with urbanness *par excellence*; fundamentally, the degree of mobility procured by a given trip has an ambivalent effect on the surrounding territory.

Let us also mention that movement with strong mobility and movement with weak mobility tend to couple with – rather than exclude – one another. To reuse the example of long-distance commuting, we can easily travel or commute long distances in a given day in order to continue living downtown, for all its diversity, richness and 'otherness', and still have weak mobility.

Let us also note another critical point: both mobility projects and movement are favored (or disfavored) by an environment to varying degrees. For a region or area (and this point is imperative), *the material product of the sedimentation of successive acts by all the actors over time*, is not a neutral, nor empty, vessel.

3.5 Potential receptiveness as a vehicle of transformation

What defines the scope and extent to which a given environment is receptive to motility is mostly linked to the material artifacts that structure it. All action takes place within a context and supposes that the environment provides the footholds (opportunities, etc.) necessary to make them happen (Gibson, 1979).

Material artifacts are critical to an environment's receptiveness to projects and aspirations; more fundamentally still, they affect the emergence and definition of these projects. That the diversity of urban forms (their appearance, ambiance, the way they are lived in and used, their price, etc.) defines an environment's receptiveness is unquestionable. By the same token the inherent potential of transportation systems contributes to defining this receptiveness, as do travel and commuting practices and cultural, sports and economic institutions.

We would like to go one step further and suggest that the impact of the material artifacts that together constitute a given environment has an impact on the very presence of projects, as well as on their nature. The existence of industrial wastelands or defunct workshops in a city tends to stimulate projects of rehabilitation. The possibility of living without a car because public transportation services exist makes this lifestyle more attractive, and thus more adoptable. The existence of auditoriums gives rise to festival-type projects. And the list goes on.

We can sum up this observation by saying that not all projects and aspirations can find the footholds they need to be realized in a given environment; some environments are more receptive to certain projects than others, depending on their morphological characteristics, the laws that govern them, their accessibility, etc.

A field of possibilities limits the options in terms of movement and their greater or lesser degree of mobility. At first glance it would seem that these possibilities differ from region to region and country to country based on things like infrastructure and transportation services. A downtown area does not offer the same opportunities in terms of movement as does a suburban one; nor does a North country provide the same services and offerings as one in the South. More importantly, every context does not offer the same opportunity for being mobile; job markets, leisure activities, etc. all differ greatly according to geographical scale – from the local to the continental and, of course, the national, which nowadays we often tend to consider as having dissolved into triumphant cosmopolitanism. Let us recall that living in London as a British national and in Nairobi as a Kenyan are radically different in terms of revenue (even for the same profession), social welfare, career opportunities, the right to travel the globe and a great many other things.

What is more, the more or less open and pluralistic nature of the context is itself contextualized. In some European countries (or some French cities, if we adhere to Marc Wiel's (1999) analyses of housing complexes), cities have been developed according to different types of urbanization, producing a different system of opportunities and constraints. Thus for instance a family wishing to live in a townhouse close to the city center will have no trouble finding something to this effect in Great Britain, a country where the housing market consists primarily of terraced and semi-detached houses; but this same family, if looking to live in a single-family house, will have a harder time finding this in Great Britain (where this type of house is rare) than in France. We can use this same line of reasoning with regard to cars. In Switzerland, where public transportation networks are efficient and adequately serve the country's numerous agglomerations both in terms of space and time, it is easier to live without a car on a daily basis than it is in France.

The importance of receptiveness and artifacts with regard to a city's substance and urban dynamic should not obscure the fact that individual and collective action also gives rise to unexpected and undesired consequences.

The impact of a given action on a given environment is rarely the one sought after, or rather is rarely the only one sought after. This has to do with the fact that an action done at a given level leads to other actions, often at other levels. Territorial dynamics are the result of the ensemble of individual and collective actions conceptualized and realized via motility. Thus can an environment be likened to a dynamic milieu in constant flux, mutating and reconfiguring based on human

action. This transformation, which in turn affects an environment's receptiveness to new action, stimulates the genesis of actors' projects and aspirations.

The various forms this meeting of motility and receptiveness take in the four territorial dimensions (the dwelling, social, functional and commercial spaces) thus are the core of territorial dynamics.

3.6 The meeting of actors and environment

Let us now focus on how this meeting between motilities and receptiveness transpires.

The social sciences distinguish three levels of analysis (typically known as scales): the personal, the interpersonal and the collective. For a long time these scales were conceptualized by contrasting the 'micro' and 'macro'; and yet this dichotomy merits rethinking. For one it stifles the 'meso,' or intermediate level, which is precisely the level we are looking at in this book. What is more (and more importantly) these levels are very much interconnected and need not be contrasted, as each encompasses a part of the other two. These three levels of action should be seen as three possible approaches to society, each encapsulating an irreducible level of the human experience. Society results from the interaction of the two and the framework for action they provide.

For an actor, linking the three levels of human experience is a delicate operation – one that requires specific skills, which gives rise to power struggles and domination. It consists in configuring the four territorial dimensions identified earlier (the dwelling, social, functional and commercial spaces) into a working arrangement. In a modern world characterized by the differing speeds at which we can move, forging this link has become a key (and constant) exercise for actors.

A great many examples can be used here. We expect a jobseeker for instance who finds a job far from his home to find the means to accept it regardless of his personal situation (in Switzerland it is the law). In the same way an executive sent to Tokyo for three months to train a team in a new software must, from his company's viewpoint, be willing to meet this demand regardless of the constraints of his private life (as a father or as part of a couple in which both individuals work, for instance). Along these same lines, in a shared custody divorce scenario both parents must find residences suitable for hosting the child or children despite their own personal goals. A family that wants to live in town must find a residential solution outside the mechanisms of the real estate market. In all of these cases motility and the way it is transformed into movement and/or mobility aims to solve the issues and tensions arising from the discrepancy in the three levels of

human experience in a context of limited leeway. These tensions are revelatory of an environment's receptiveness.[6]

Linking the three levels has given rise to several strategies aimed at reducing these tensions:

Dissonance leading to resignation. In this first scenario the possible arrangements of the four territorial dimensions allow actors to realize their projects only with great difficulty. Actors therefore must lower their goals and expectations in order to escape this Catch-22. Cécile Vignal's study on mobility arrangements following the relocation of a factory's production unit in a small town in eastern France aptly illustrates this phenomenon (Vignal, 2005). While some adapted easily to the multi-residential or long-distance commuting solutions they had to adopt, others preferred to leave their job in order to maintain local ties; others even opted for divorce to keep their jobs. In any case the refusal to reconcile these dimensions is itself a form of resignation.

Shaping leading to conformity. The socially-valued, preferred arrangements of the four dimensions serve here as a kind of cookie cutter when it comes to making decisions. This second process is common when the 'good life' is that which is defined by a society's prevailing model of success. Ownership of a single-family home (once we have a family) is undoubtedly emblematic of this. This kind of choice is at once encouraged by the commercial space, which provides a market of single-family homes, and esteemed socially as a model of 'good family values' in the dwelling and social spaces. Many families in fact comply with such values for these reasons alone – and not because it is truly their desire (Kaufmann et al., 2001).

Alternative projects leading to innovation. In this third arrangement the limits of the possible arrangements of the four dimensions are pushed and finally rejected. The time and energy spent looking for new strategies or arrangements often gives rise to this third scenario. Pugnacity with regard to difficultly-realizable residential aspirations is good examples of this. The collective squat movement in Geneva (a pioneer project stemming from the desire to rethink housing privatization 'made official' by a partnership with the local authorities in the 90s based on contracts of trust) is yet another. This movement gave rise to new forms of collective living since the start of the new millennium (Pattaroni, 2006).

These different arrangements are instrumental to individual and collective actors' satisfaction (Schneider et al., 2002; Hofmeister, 2005) and thus have an impact on their dynamism.

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6 We must distinguish between the tensions *among* the different levels and those that arise *within* each level which, strictly speaking, are not our concern here. By this we mean the personal conflicts arising from cognitive dissonance that can lead, in their extreme, to suicide. Interpersonal conflict leads to disputes that can be settled by law; societal conflicts have to do with political controversies and are typically settled by laws and institutions and, in extreme cases, by war.

3.7 Towards a provisional definition of the city

Based on the reflections we have made in this chapter, I will now propose a provisional definition of the city.

We started with the idea that actors build a framework for their projects using their motility, taking all the obligations and constraints they are subject to into account. We have also seen that their motility is materialized in an arrangement between the four territorial dimensions built on their aspirations and the receptiveness with which these aspirations are met – an ideation that highlights a dynamic, pluralistic view of the link between action and context.

It is also important to remember that with regard to an environment's substance and dynamic every environment offers a field of possibles in terms of receptiveness to projects and aspirations that varies in breadth and is inextricably linked to the urban morphologies and artifacts that frame them (especially legal, procedural and institutional systems).

By looking at the city in a retroactive and therefore dynamic way, our analyses have allowed us to broaden both our schematic and general definitions of the city as the meeting of diversity and density:

"A city is characterized by its diversity and density, which is the materialization of the motilities of past actors and which defines its receptiveness to today's motilities."

We would also like to add that the city's field of possibles in terms of realizing projects is measured based on the tensions and compromises actors must face.

The city offers a vast field of possibles in terms of projects and aspirations that is continually being updated by the actors in it. Because of the diversity of its social milieus, urban forms and economic dynamism, the city is a place where highly contrasting types of projects can be realized, as the very diversity of these projects defines it.

The city is a place where the different types of space intermingle in different ways. It is possible to live in proximity to conveniences and have reticular lifestyles and still leave plenty of room for immediacy. Many places offer these different possibilities; but the city has the advantage of offering infinite ways in which to combine them.

We will look more closely at our provisional definition and then test it using the empirical data presented in the following chapters and that will also serve as the backbone for the rest of our investigation.

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Chapter 4

The individual motilities that make the city

4.1 Introduction

In this chapter we will look at the links between individuals' motilities and the receptiveness with which they are met in a given environment, the goal being to determine where, when and how it is that motilities result in residential choices and lifestyles and thus the makings for cities, regions and their resulting dynamics.

While keeping our approach centered on the tension between theoretical reflection and empirical results, we propose exploring these links by looking at the opportunities (and limitations) that allow individuals to affect their motility. Three key questions will guide our investigation: What characterizes the motilities that contribute to making the city a city, (i.e. strengthening urbanness)? Secondly, with regard to an environment's receptiveness, what factors are likely to hinder or favor motilities oriented towards urbanness? Finally, what characterizes an environment that is receptive to city-making motilities?

To answer these questions we will focus on the links between residential and lifestyle choices and the way individuals 'live' the spaces they frequent on a daily basis.

Jean-Yves Authier and Jean-Pierre Lévy (2002) observed that "[f]ar from being two contrasting ways of living in the city, neighborhood attachment and urban mobility go hand in hand." [Our translation]

And yet existing analyses of daily mobility and residential choice dynamics still are often entrenched in research traditions that snub one another at best. The present analysis, based on five sets of qualitative and quantitative empirical

data, will enable us to shed light on our three questions. The first is a 2007 study of lifestyles in 14 international cities (Alexandria, Berlin, Chicago, London, Los Angeles, Lyon, Mexico City, New York, Paris, Beijing, Prague, Shanghai, Sydney and Tokyo) (Damon, 2009). The second offers qualitative and quantitative data as well as observations from a study on residential choices in Bern and Lausanne (Pattaroni et al., 2009). We will also work with findings from a qualitative survey on long-distance and weekly commuters in Belgium, Switzerland and France (Joly et al., 2006; Vincent et al., 2010). Qualitative interviews regarding individuals' relationships to time and space in Parisian commuter hubs (Kaufmann et al., 2009) will also be used. Finally we will utilize two databases of quantitative surveys on peri-urbanization, relegation and gentrification in Paris, Lyon, Strasbourg and Aix-en-Provence (Kaufmann et al., 2001; Pattaroni et al., 2011).

The basic principle is simple: the exercise consists in both testing the heuristic virtues of the theoretical approach developed in the preceding chapters and considering it in light of our findings. In the introduction to this work I emphasized the need to somehow compensate for the split between theorization and empirico-empiric research in applied urban studies. This chapter and the two that follow will offer a practical application of this goal – so central in an approach guided by the earnest effort to avoid both "urban philosophizing" and a merely descriptive approach to the profound transformation cities and regions are undergoing with no comprehensive goal.

An attempt to answer the questions just posed will serve as the guiding principle for this chapter, using five observations from our empirical research. I will start by presenting each in turn and then discussing them relative to the theoretical approaches to mobility and the city outlined in chapters 2 and 3.

4.2 Five empirical observations

4.2.1 Cities are lauded for the mobility they offer and criticized for the commuting times they impose on actors unable to adapt

Many inhabitants claim they find fundamental qualities in the city that they find nowhere else. It is a space that is both dense and diverse – one that allows us to encounter 'otherness' (meaning both those different from us and difference in general). It provides career opportunities and allows us to travel without ever actually leaving its limits.

It also allows us to be someone else or change our lives thanks to its anonymity. In short, the city offers us mobility. These dimensions become even clearer when we look at the different lifestyles in our 14 cities. Here we can appreciate how primordial mobility opportunities are to life in the city. The vast majority of

those surveyed appreciated the mobility their city offered, regardless of its latitudinal or longitudinal coordinates. To quote one Sydney resident, "[I]n the city you're never too far from the action – what's going on."

Among the different reasons for appreciating the city, the six most often cited by those surveyed had to do with the city's offerings with regard to mobility and accessibility. Ease of getting around ranked first, followed by leisure activities, cultural creativity, opportunities for going out (i.e. party) and economic dynamism (Fig. 4.1). In eight of the fourteen cities, ease of getting around was the top reason respondents loved their city. In Berlin, cultural and sports activities just barely outranked it. In Prague, architecture reigned supreme followed by leisure activities and economic dynamism. In Beijing and Shanghai, it was economic dynamism that inhabitants prized above all. In Sydney, it was leisure activities and cultural diversity. Alexandria stood out for its love of partying (ease of getting around ranked only tenth). On the whole however getting around and all that it sanctions was greatly appreciated in all of these cities.

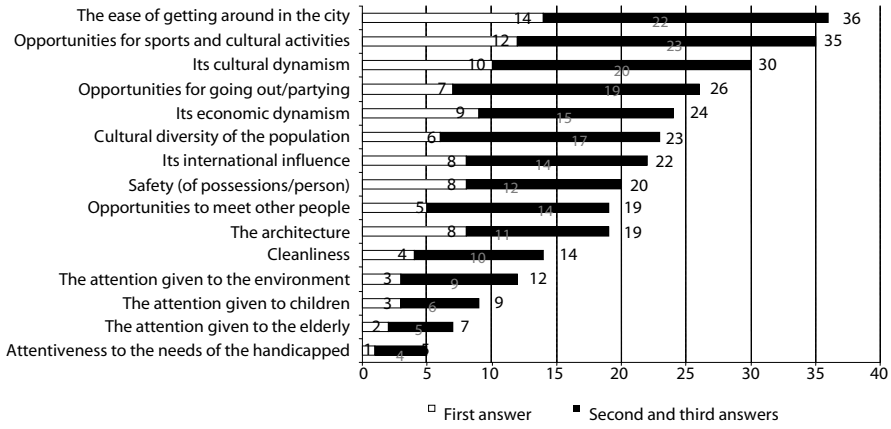

Figure 4.1 Reasons for liking the city, Source: IPSOS Survey/Observatory of urban lifestyles, 2007 (Damon, 2009) [our translation].

Incidentally, this same survey allowed us to observe that, of the reasons for hating city life, traffic jams came out on top followed by pollution and noise. While issues regarding public transportation ranked only eighth, this strong dislike of traffic problems is also in some way a reflection of the failure or inappropriateness of the public transportation system (Graph 2). In nine of the fourteen the cities included in our sample, with the exception of London (where issues regarding pollution and the mismanagement of public services dominated), Berlin (where dirtiness and

mismanagement of public services ranked first), Paris and Lyon (where pollution was cited above all) and Mexico (where lack of safety was the main issue), traffic jams were a major concern.

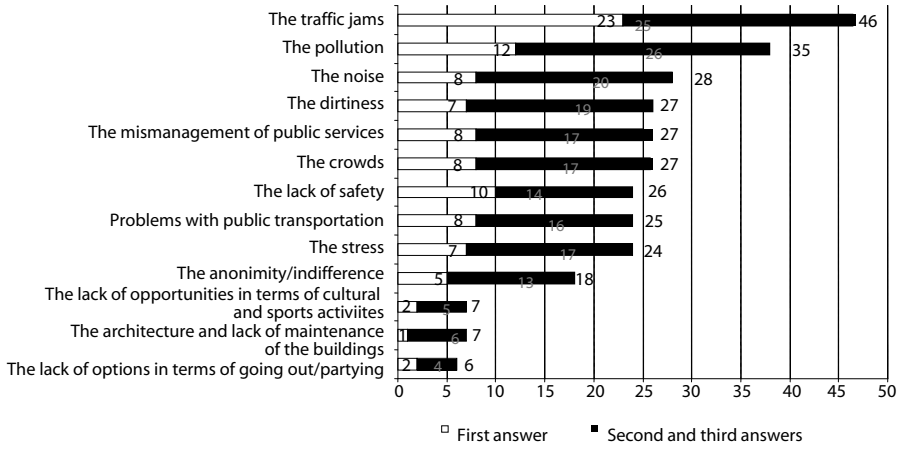

Figure 4.2 Reasons for hating the city. Source: IPSOS Survey/Observatory of urban lifestyles, 2007 (Damon, 2009) [our translation].

While the reasons for appreciating the city were strongly linked to mobility, the reasons for hating it had to do with commuting and getting around as well. Is this some kind of paradox? Or contradiction? Clearly feelings on this issue are mixed and bring with them a certain ambiguity. We can also look at it in light of certain mobility-related inequalities; those most affected by traffic congestion cited it as their top dislike while those less touched by it, in contrast, lauded the options in terms of freedom of circulation. Here we can likewise appreciate the importance of distinguishing between mobility and movement. In the fourteen cities we looked at, commuting by car or public transportation was seen as a handicap, as both options put individuals in a situation that in fact limited the city's potential mobility offerings. Getting around by car in a city means no longer being able to choose where and when to stop; commuting by bus means sticking to a certain route. What is more, lack of comfort and ease in an environment (a bus for instance) often limits our activities there – what we call the "tunnel effect." This factor has become particularly troublesome as commute times have increased.

4.2.2 Apart from mobility, the qualities of life sought after by those who choose to live in the city were diverse and thus an expression of residential lifestyles

A diverse quality of life

Mobility options are a determinant of an environment's receptiveness and a fundamental quality of the city and terrotiry. While this first observation confirms the empirical relevancy of distinguishing between movement and mobility, it does not tell us if the pursuit of mobility is an across-the–board movement, or even how it manifests itself with regard to diverse lifestyles. We will now explore these questions using our qualitative and quantitative data on residential choices of families in Bern and Lausanne.

Our research on the link between residential choice and lifestyles shows that separating choice of residential location from daily practices in no way aids our understanding. Residential choice is without question intrinsically linked to the search for an environment that is receptive in specific ways. The opportunities for movement and mobility offered by a given context attract individuals whose motilities are coherent with it. In order to appreciate the relationship between environment and motility we propose using the idea of residential lifestyles(Pattaroni et al. 2009), which we define as the sum of all the activities and experiences that give a person's life meaning structured in time and space. The main idea here is that there is no single 'quality of life' but rather 'qualities' of life which are intrinsic to the diverse aspirations and lifestyles of different families and individuals.

We explored these questions in Bern and Lausanne, two cities of comparable size and both located at the heart of regions that are extremely different in terms of building density, amenities and transportation accessibility. Bern is a dense city whose sprawl is well-serviced by railway infrastructures. Lausanne on the other hand is much more spread out; access to the city is almost exclusively automobiles-oriented.

Seven types of residential lifestyles

Our investigations allowed us to identify seven distinct types of residential lifestyles. Our main goal was to better understand how the different elements of lifestyle constitute a system and influence residential choice. We created a classification system combining the six principal residential preferences based on the criteria of density, safety, social networks, social status, tranquility and conviviality; each type refers to a specific 'residential lifestyle', meaning the blending of distinct ways of organizing daily life, creating social networks and having certain preferences in terms of residential location. To better highlight the interrelatedness of these lifestyles we will now look at the different types in greater detail.

1. Concerned city-dwellers This first group includes those with lifestyles that are most attracted to the urban environment. Their valorization of soft forms of mobility, living close to work, taste for social diversity, community life and even the desire to live downtown in old, historical buildings points to a densely-built environment that is amply served by public transportation, is close to amenities and has a mixed population.

2. Communitarians This category is also demanding with regard to its surroundings. Communitarians tend however to be more attached to a close-knit community of neighbors than to the actual material surroundings. Conviviality and proximity to family and friends are of great importance.

3. The bourgeois type This group tends to be more individualistic and conservative and not particularly involved in the community. They rarely spend time in their neighborhood and do not seek to live close to their families or friends. What they *do* seek above all is an elegant home in a safe neighborhood with a good reputation.

4. The unsatisfied type This group includes individuals who have a more or less passive relationship with their residential choice, which emphasizes no true choice criteria in particular. Of the various types these individuals tend to be the least satisfied with their residential location and home.

5. The individualistic type This type tends not to have strong social attachments in or to their residential location yet unlike the more conservative types pay little attention to reputation or safety. Instead they value community life and tend to spend a lot of time in their neighborhoods, where they do their shopping and often go out in the evening. As such, they seek a location that is practical, well-serviced by public transportation and offers easy access to a wide variety of cultural offerings.

6. The back-to-nature type This type has a rural lifestyle; the car is a central fixture and social ties are important. As they tend to value peace, quiet and nature, these individuals (often with young families) tend to live outside the city, which they avoid as a general rule), in communities where they have emotional ties and in proximity to family and friends.

7. Peace-seekers This group values tranquility and seeks a calm, comfortable (preferably single-family) home from which they can go about their daily activities mostly by car. Their social networks are spread out across the country and beyond; thus they do not have strong social ties to their residential location and are not particularly involved in their community.

The definition of these different lifestyles demonstrates that every family does not 'use' the environment the same way. To summarize these different lifestyles the table below highlights differences in practices according to type based on how they value a given residential choice criteria.

Concerned city-dwellers and individualistic types have a much greater tendency to use public transportation and are less likely to own a vehicle than other types. They prefer organizing their lives and schedules at the local scale, which allows them to get around by foot rather than having to run from one end of the city to the other. Naturally, proximity to train stations, public transportation services and amenities all factor in heavily as choice criteria (represented here by density). In contrast, the types that use their vehicles frequently tended to cite public transportation services and proximity to a train station as less important (bourgeois types, back-to-nature types and peace-seekers).

We would like to reiterate here that lifestyles organized around certain modes of transportation condition residential location choice criteria in an important way.

The typology of residential lifestyles is also linked to highly variable consumption patterns with regard to automobile use. Concerned city-dwellers used cars the least, followed by communitarians. At the other end of the spectrum peace-seekers and back-to-nature types tended to use their cars more frequently – almost three times more than concerned city-dwellers. These differences are important, especially considering that peace-seekers and back-to-nature types did 90% of their traveling by car and that those interviewed all lived in the same urban area (and therefore more or less the same context). It is worth noting however that the number of kilometers travelled by car was roughly a third lower in Bern than in Lausanne for all types.

Above all these findings indicate that residential lifestyles are extremely diverse. Bear in mind that in our survey alone we observed different expectations in terms of quality of life. Nonetheless we found that what was attractive about city life could not be summed up as a mere quest for mobility; many of the families we surveyed chose to live in the city for other, often practical reasons.

Mobility and life style

Our qualitative studies on long-distance and weekly commuters in Belgium, France and Switzerland allowed us to look more deeply into these questions. We found that residential lifestyles fundamentally differ based on the motivation behind or reason for the motility.

We focused specifically on this point by analyzing the mobility projects and aspirations of long-distance and weekly commuters.

Respondents who were attached to their neighborhood because of local social ties often chose to commute long distances. Take Sonia for instance, who works at a company whose headquarters moved from Basel to a suburb of Bern. Suddenly – and without choosing to do so – Sonia became a long-distance commuter. "I'm originally from Basel; I've lived there my whole life, and that's where my circle of friends is. That's why I could never imagine moving just to be closer to work." (Sonia)

This kind of attachment can also be borne of strong ties to a home, neighborhood or city. Christine for instance is extremely attached to her house – a farm she renovated herself. She justifies her long commute this way: "I completely renovated the house myself. It's an old-fashioned Gros de Vaud farmhouse. Even though it means commuting two hours a day, I want to keep on living here." (Christine)

Alexandre loves his neighborhood in Geneva. "I'm very attached to the neighborhood (Plainpalais) where I grew up. I don't have a lot of friends there anymore because I left several years ago, but I have lots of memories." (Alexandre)

Far from being highly mobile, long-distance commuters have very specific and localized social and/or spatial ties, and tend not to want to uproot. They will take a job provided it does not mean relocating. High-speed transportation makes it possible for them to go on leading a sedentary life. It also means that they ultimately experience travel as a reversible phenomenon and, while they move a great deal, they are anything but mobile.

Conversely, the practice of weekly commuting would appear proof of a desire to confront otherness and the unknown. In haste we might judge daily long-distance commuters' mobility as not contributing to the "making of city" and that of weekly long-distance commuters as city-building.

And so do we discover that practical considerations also offer a strong argument for the choice to live in the city.

Lastly, these findings shed light on the difference between those individuals seeking mobility opportunities in their everyday lives by changing roles – typical of the city – and who reinforce this choice by opting to mix with others and accept other viewpoints and those individuals seeking stability and routine – the absence, as it were, of major changes in their daily lives – by choosing a central urban residential location for its many conveniences and which by comparison ultimately demands little change and therefore less mobility.

4.2.3 Individuals' mobility in the public spaces of their daily lives depends not only on the diversity and number of services and amenities available but also on their ease of use. A comfortable space lets individuals create their own mobility opportunities

Minimizing travel time or research of comfort?

The spaces we encounter in our daily lives also serve as potential footholds, or places where we can meet and do any number of activities, great or small, or simply enjoy ourselves by getting a different perspective. Commuting – getting from point A to point B – ceases to be a constraint in our otherwise-efficient schedules once we learn to integrate commute time by turning it into a veritable experience with its own unique qualities. Once we have mastered this skill (i.e. turned movement into mobility) we no longer necessarily seek to minimize this time.

Many studies on mobility highlight that the average number of trips an individual makes a day and the time budget allotted for these trips has increased in European and North American cities[7] – a finding that distorts the famous Zahavi conjecture, put forth at the end of the 1970s. According to this conjecture (named after the economist who formulated it) daily commute times for individuals living in urban areas remains constant. Any increase in travel time will be made up for by an increase in distance travelled, which explains the constancy of home-work trips (somewhere between 60 and 90 minutes a day, depending mostly on the size of the city).

This analysis, almost considered a law, is today being called into question. Not only has the number of kilometers traveled on a daily basis continued to grow but it is the result – among other things – of the increase in travel time budgets. Thus in Denmark for instance daily travel time budgets rose from 56.6 minutes in 1975 to 72 minutes in 2000. Similar phenomena were observed in Belgium, Germany, the Netherlands and Switzerland[8] and in many American cities.

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7 The increase in travel time budget's (TTBs) has been a hot topic in international literature since the beginning of the new millennium. For more on this topic see Patricia Mokhtarian and Cynthia Chen's "TTB or not TTB, that is the question: a review and analysis of the empirical literature on travel time (and money) budgets," Transportation Research Part A, vol. 38/9-19, 2004, pp. 643-675 and Bert Van Wee, Piet Rietveld and Henk Meurs's "Is average daily time expenditure constant? In search of explanations for an increase in average travel time," Journal of Transport Geography, vol. 14, 2006, pp. 109-122.

8 In France studies continue to indicate the constancy of TTBs, which is consistent with the fact that these studies do not take trips from urban residential zones to outlying areas or trips made exclusively in outlying areas into account. By only counting respondents who stay within their urban residential areas, commute time budgets remain more or less constant – a finding that is true for most Western countries. If however we include trips outside of the urban area, time budgets increase considerably.

The growth of travel time budgets called into question

The increase in travel time budgets highlights the growing importance of travel and commuting in daily life as well as several other concomitant phenomena:

Let us first consider the various substitution phenomena between the different types of movement. The fact that TTBs did not increase more dramatically between the fifties and the eighties before growing quickly during the nineties in some ways overshadows a radical change in the motives behind them. Work – the predominant motive 30 years ago – now accounts for only 20-30% of all travel. This is largely a consequence of the fact that full-time employees no longer go home for lunch, thus cutting the number of home-work trips in half. At the same time so-called 'leisure' travel has increased considerably; and yet these substitutions have stopped cancelling one another out over the past several years. Thus the number of work-related trips is no longer decreasing while leisure travel on the other hand has continued to grow. Add to this a slight increase in activity chaining (meaning doing several activities in succession without returning home in between). More than just simple strategies, these changes in mobility patterns reflect profound changes at the organizational level (women joining the workforce has directly led to the decrease in trips home at lunchtime) and cultural level (the growing importance of leisure activities and free time) and are likewise a reflection of changes in urban public spaces themselves (for instance, it is now considered dangerous to allow a child go to school on his own).

The increase in TTBs is also the result of the decoupling of transportation speeds and movement. The compensation mechanism for the increase in distances traveled with the gain in terms of speed of modern transportation is no longer valid: those who go fastest and travel furthest still spend the most time in transit. Moreover, there is still a small portion of the population whose lifestyles demand more than two hours of commuting a day (Joly 2006). A number of socio-economic changes explain this trend: expanding markets (which require professional trips further afield), the residential compromises working couples must make and the slowing of the gain made in terms of speed on road infrastructures (resulting in an increase in traffic congestion on road networks due to increasing traffic flows).

In a nutshell, we are willing to accept longer commute times now than in the past. But how do we experience them? What impact do they have on us? And what do they tell us about different ways of using the public space?

Our survey data on long-distance commuters allowed us to look more closely at how these individuals 'live with' their commutes. What we discovered was that

this type of commuting is distinct in that, as individuals in this category tend to travel by train, commute times can actually be used for other activities thanks to cell phones and laptop computers.

We discovered that the first prerequisite for constructive use of this time was having a seat (i.e. being able to plan on having one), without which activity planning is impossible. Once a seat has been procured, one can engage in a wide variety of activities – more often than not work-related – although social activities and even a bit of R&R are not out of the question.

Jacqueline spends six hours a day commuting but feels she has "more time for herself" since she started taking the train. Her flexible schedule makes such a commute possible (the beauty of the scenery along her route helps as well). Jacqueline tries to make the most of her commute time by dealing with any pressing issues or projects that come up during her trip.

Marc, another commuter, uses his commute time to socialize:

"I often travel with other commuters I've gotten to known in the dining car on my way home, so I get to spend the whole way back hanging out with friends." (Marc)

Nonetheless, using commute time effectively is a skill that is better mastered by some than others, as we discovered with the long-distance commuters we surveyed. Using one's commute time constructively supposes the ability to concentrate or relax in a space that is often noisy, to not suffer from motion sickness and to be able plan activities ahead of time.

Our survey also showed that the use of commute time often had to do with the individual's profession and flexibility in terms of their work schedule. When at least a part of the trip time was counted as 'work time', perhaps allowing the individual to work from home part of the week, the possibilities increases exponentially.

We found that the experience of traveling between different Paris hubs was quite diverse, and that motility skills (by and large linked with the ability to view time as spread out, free-flowing and unlimited when traveling) greatly influenced the individual's sensitivity to the spatial organization therein. Those with a fluid perception of time acted opportunistically and had modes of consumption that closely resembled those found in the urban milieu (i.e. not at all or only marginally influenced by the actual organization of the space inside the hub). In contrast, those who experienced time within the hub as a constraint found it harder to take possession of the space for realizing different activities and did not consume the commercial services available.

Paris 2011 - Fanny Steib

The importance of the quality of space

Architecture, signage and ambiance in general all influence commuters and their ability to see time as fluid and thus be open to taking possession of these hub spaces. One of our main goals here is to show that the ability to use commute time depends on the interaction between individuals' motilities and the space itself. More than just the businesses or services there, it is our level of comfort within a given space that determines how we use it and what we do with our time there. The coziness and generosity of a place, the lighting, how we perceive its cleanliness and how safe we feel there are all determinants of how and to what degree individuals engage with it. Thus the ability to be mobile supposes that either there are opportunities to be seized or, if not, the conditions are such that they will allow the individual to create them.

These qualitative results, which echo the findings of the international polls taken by the observatory of urban lifestyles, also point to the fact that the commute experience likewise depends on the interaction between the time itself and the mobility opportunities offered by the mode of transportation.

In cities where public transportation was the dominant mode (London, Paris, Berlin and Prague) a two-hour daily TTB was considered 'normal', though inhabitants would ideally prefer to spend less time commuting. This was not the case in cities where travel by foot or bike was predominant (Beijing, Shanghai, Sydney, New York, Chicago, and Mexico City), where a two-hour daily TTB was considered tolerable.

Getting around by bike, foot or car also makes it possible to combine other activities or make quick stops along the way, making the duration of the commute – even a long one – more bearable than a long train or bus commute. The first also give individuals more freedom with regard to their choice of route, allowing them to take a more circuitous way home for the sheer pleasure of discovering the city.

Finally, our findings show that travel can be understood with regard to the mobility opportunities it procures, and that these opportunities have to do with the specific characteristics of the transportation and commuters' comfort level when travelling in them. The possibility of breaking up a long commute to realize other activities along the way is essential for those seeking mobility.

4.2.4 The fact that an environment's receptiveness to residential choice is often limited and localized is at the heart of social inequalities when it come to residential lifestyles

Limited and non-egalitarian residential choices

Mobility is often an exercise in compromise. The broadening of the field of possibles with regard to mobility and the advent of the urban have multiplied

the choice of comparably-priced residential locations for a large portion of the population. Thus we can choose to live in a dense environment or in the suburbs – a choice that supposes compromises in terms of the size the apartment or house, access to amenities by car and proximity to green spaces, services and facilities. These compromises are emblematic of the quest for a balance between life projects and options in terms of residential location. And so the question remains: What of those who refuse to compromise?

In the scientific literature it is not rare for the rapid growth of the peri-urban environment to be interpreted as the result of its ability to meet with the prevailing values of the time – be it the desire to become a home owner, live in a single-family house or be close to nature.

Urban sprawl is clearly linked to choice with regard to residential location, which nonetheless is not necessarily the concretization of individual aspirations. It is possible that for some, owning a house in fact is the result of a set of structural or contextual incentives or, more simply put, a compromise the household makes in light of divergent aspirations.

Our quantitative survey of 5500 households in the Ile-de-France, Lyon, Strasbourg and Aix-en-Provence regions clearly highlights such considerations. To begin with, it shows that residential aspirations do not unanimously and unequivocally lean towards a single-family house in the suburbs or country. While those living in central urban neighborhoods expressed a desire to live in the suburbs, the contrary was true for those living in suburban and rural areas. Note however that aspirations relative to residential location are dichotomistic, tending either towards inner cities (46% of those surveyed) or exurban/outlying suburbs (42% of those surveyed). The desire to live in suburbia was marginal, including among those who already live there (13% of those surveyed). While personal taste certainly plays a key role here, let us not forget the importance of social status. In France for instance the *banlieue* (i.e. city suburbs) has become increasingly stigmatized over the past thirty years or so. More than a mere image of poor, violence-stricken areas this stigmatization often crystallizes around the reputation of the schools. Thus parents with school-age or soon to be school-age children have a strong propensity for residential mobility towards alternative contexts.

The findings in this survey also indicate that residential choice often does not go hand in hand with residential aspirations (see Kaufmann, 2002). While we observed aspirations towards residential life in city suburbs by working class and blue collar families, the opposite was also true (those wanting to live in the city center currently living in the city suburbs). For example while 28% of home-owning household members in the urban-suburban milieu would like to live in the city suburbs, 44% living in this milieu would like to live in a more urban

area. There are several explanations for this trend, the most significant being the real estate market. Families wanting to own a large apartment *and* continue living in a central location are reluctant to move to peri-urban areas for lack of offers that corresponded to their financial means and would rather to move to outlying suburbs than buy a large apartment in the city suburbs, often for reasons having to do with the reputation of the schools there. That is not all, however. The study also shows that the trend I have just described also has to do with a certain disenchantment vis-à-vis life in the 'burbs, where the temporalities of daily life, automobile dependency and the imposition of certain restrictions on activities schedules due to lack of proximity proved difficult for certain respondents. The opinions of growing children was another factor in wanting to live in a more urban area; young people tended to experience automobile dependency and the absence of recreational activities as an impediment to their independence.

Table 4.3 Congruence of real and desired residential location.

	Live in the city/city suburbs		Live in the outlying suburbs	
	Would rather live in the city	Would rather live in the city suburbs	Would rather live in the city	Would rather live in the city suburbs
Home owners	72%	28%	44%	56%
First-time buyers	63%	37%	45%	55%
Tenants	63%	37%	31%	69%

Thus, in France, it would appear that the peri-urban milieu is the location imposed on individuals due to the constraints of the real estate market, other household members or, more simply, spatial segregation.

The results of our study nonetheless indicate that the stigmatization that plagues many city suburbs is a fundamental obstacle to employing measures aimed at retaining families in city suburbs. The inner city milieu in general does not lend itself to a plethora of affordable, adequately-sized housing, as development has nearly reached its limit and real estate prices are high. Nor it is possible to offer satisfactory public transportation services to limit automobile dependency. It is in fact in the city suburbs that the creation of such opportunities is potentially realizable. And yet many banlieues in France are stigmatized by their spatial segregation, even those that have the means to create this type of development. As it stands many of these city suburbs are not yet receptive to such forms of development.

Disparities in context

We learned through our investigation that the range and location of those areas receptive to residential lifestyles serve as a basis from which aspirations result in actual residential locations. The examples of Great Britain, Germany and Switzerland are from this standpoint interesting in contrast to the French context.

The classic image of the English village depicts a quiet neighborhood with small, seemingly-identical row houses. This type of development is indeed predominant in England, with more than 80% of the population residing in such a context (Wiel, 1999: 34), although other types of collective habitats equally coexist. At times dense, the range of offerings is nonetheless quite homogenous – from the two-bedroom "terraced house" to three- or four-bedroom semi-detached houses. Apart from its uniformity this type of development is characterized by two unique traits: to begin with, it is an old-fashioned style of development that has existed for more than a century; secondly, it is nonetheless quite dense, considering these developments are comprised of individual residences. The long history[9] of this type of development has of course one major consequence: it was more or less conceived prior to widespread automobile use and thus was planned for foot traffic, allowing for a certain degree of pluralism in terms of possible lifestyles. English villages are often to this day still founded on the notion of the local, so as to be accessible by foot, bicycle or public transportation (Pharoah & Apel, 1995).

The British context highlights the relative nature of the contradiction between collective habitats and old world-type development and individual and modern ones. In Great Britain not only has the single-family house existed for a long time but we are now also seeing new types of collective habitations; small apartment buildings (particularly in the North) for instance are valued for their mixed populations. This also suggests that if a policy of densification has been successful among the middle classes in England it is because these neighborhoods are not located in proximity to disadvantaged neighborhoods, unlike in France.

In Germany, in addition to traditional buildings and single-family town houses, we also find a variety of semi-collective habitations such as three-story buildings or independent town houses with several apartments. As a general rule we find very little of French-style peri-urbanization (i.e. spread out) in Germany, where more than 60% of the population lives in multi-apartment buildings, compared with only 40% in France (Wiel, 1999: 34). We can also extrapolate from these findings the consequences of urban planning policies and development standards that make low-density areas economically uninteresting (Pucher, 1998: 286-287). The trend towards individual-type residences close to nature (especially

9 In 1850 half of all English people already lived in the urban milieu (Champion, 1989: 83).

among families) was geared towards medium-density development (Kontuly & Vogelsang, 1989: 157).

Residential aspirations therefore do not necessarily find footholds in just any context, which means that it would be erroneous to conclude that an individual *aspires* to live in the suburbs simply because he or she lives there. Often we find ourselves forced, as we have just seen, to compromise and make concessions.

4.2.5 A space's receptiveness to lifestyles can be misleading to the point of challenging residential choices

Gentrification and its multiplicity

A neighborhood's receptiveness to different residential lifestyles can sometimes be misleading, especially for families. Characteristics such as the attractiveness of its layout and physical attributes, proximity to green spaces or the absence of noise from vehicle traffic are superficial attributes that say little about a neighborhood's true substance. Our research on the gentrification phenomenon in neighborhoods in the east of Paris allows us to fully appreciate this fact (Pattaroni, Kaufmann, Thomas, 2011). We used a comparative approach to analyze the gentrification phenomenon in six neighborhoods (all served by public transportation), three neighborhoods in the east of Paris: La Réunion (20th arrondissement), Ménilmontant (20th) and the Goutte d'Or (18th) and three city- suburbs in northeast Paris (the town centers of Montreuil, Bagnolet and Saint-Denis). All six saw sharp hikes in real estate prices in recent years and shared two basic characteristics: great socio-cultural and ethnic diversity and an industrial or working-class history. Each sector was subject to two types of investigations:

- A survey of practices and aspirations aimed at reconstructing household residential strategies was conducted in spring 2003 among 500 representative residents from each of the six areas based on their gender, age and socio-professional category.
- A socio-historical study of the six areas from 1980 to 2005 based on urban planning documents, scientific literature and interviews with members of the public sector and various associations.

The advantage to this approach was that it allowed us to quantify as well as analyze the gentrification phenomenon according to the history and morphological trajectory of each neighborhood. By combining the two investigations and using specific knowledge of each neighborhood and its dynamics gleaned from our case studies, we were able to bypass many of the interpretive problems so often encountered in quantitative analyses on the social division of space (Rhein, 1994).

Our findings indicated that two of the neighborhoods, the Goutte d'Or and Saint-Denis, had resisted both bohemian and middle-class gentrification.

Individuals did not want to leave these areas because of residential aspirations or for economic reasons, but rather for reasons directly related to the negative social and sensitive experience of daily life in these neighborhoods due to their social composition. Thus can we appreciate the importance of a neighborhood's social *image* on the one hand and the actual *physical* experience of living there on the other which, in the long term, reveals its shortcomings (not only social conflicts but noise, dirt and, on yet another level, monotony). Such problems over time tend to become unbearable, driving residents to areas that offer them fundamental elements that the present environment does not. Nevertheless it seems that even left-wing liberal 'gentrifiers', in their inability to secure a satisfactory lifestyle, are also leaving the Goutte d'Or.

These findings have led to several conclusions. To begin with, we saw that an across-the-board hike in real estate prices in all six neighborhoods masked the multi-gentrification phenomena obvious in the different strategies, aspirations and manifestations of attraction and repulsion. This situation in essence harks back to the diversification of gentrification models, or rather the diversification of residential mobilities within the middle classes and their expression in the urban context. This raises an essential methodological point: mere observation of a neighborhood's social transformation does not reflect the diversity of the gentrification processes that happen there. Only by looking more closely at the logics of action of those involved within the historic context of each neighborhoods were we able to appreciate the diversity of gentrification processes and factors that shaped them.

Mobility and gentrification

The identification and analysis of the trajectories of these neighborhoods clearly shows several distinct processes:

The first process (most closely resembling the stage model) could be described as bohemian, or culturally-oriented, gentrification dynamics. This process, which in fact is multi-phased, starts with 'pioneer' gentrifiers' attraction to a depressed neighborhood followed by something akin to the arrival of 'bohemian' middle classes gentrifiers, ending finally with the arrival of the more traditional middle classes. Of the cases we studied Bagnolet, Montreuil and Ménilmontant best typified the first process.

The second process, also resulting from the deterioration of the built environment but in this case leading to the demolition and subsequent large-scale rebuilding of the neighborhood, might be described as real-estate-driven gentrification dynamics,[10] in some ways akin to what Davidson and Lees (2005) call

[10] In the first process the market also plays an important role, but primarily as a way of reinforcing and stabilizing in the long term what started as a more social process.

'new-build gentrification'. We identified this type of dynamics in La Réunion, an area that attracts an 'upwardly mobile middle class' population on the lookout for affordable property.

A third process could be described as thwarted gentrification. These are cases wherein the dynamics of the gentrification process are partially or completely impeded by the day-to-day nuisances encountered by middle class residents coupled with the presence of public housing.

Only by focusing on a neighborhood's long term trajectory and of its daily life in it can we possibly understand thwarted gentrification phenomena. Static analyses looking at the structure of the real estate market alone do not take into account the nuisances which, over time, make life in a neighborhood insufferable and drive residents away. Thwarted gentrification mirrors another phenomenon central to this debate – that of 'colonization'. Colonization can be described as the unfortunate result of long-term gentrification in which former residents are driven from a neighborhood. These two contrasting situations (thwarted and real estate-driven gentrification) may be approached symmetrically, as both refer to the way in which one lifestyle may exclude another.[11] The colonization issue invites us to pursue a more in-depth study of the expropriation mechanisms involved in urban development. To better appreciate the diversity of these exclusion mechanisms, our studies suggest we should consider the many ways in which the built environment influences choices and lifestyles, as well as middle class gentrifiers' tolerance of social diversity. Thus during residential decision-making certain factors take on particular importance (price and type of available housing, access to public transportation and reputation linked to the degree of social diversity for instance) while others crop up in the long term as a result of day-to-day problems (noise, school-related issues, uneasiness in the public space, etc.). Each of these relationships to the built environment is likely to add to expropriation phenomena in a dynamic manner (exaggerated prices that make certain lifestyle strategies impossible, a bad reputation that clashes with certain aspirations or negative sensitive qualities that become increasingly intolerable).

4.3 Conclusion

Three basic questions relative to individuals' mobilities served as the organizing principle for this chapter. Let us review them once again before summarizing our findings in the context of theoretical framework we developed in chapters 2 and 3.

[11] The term 'expropriation' does not only refer to exclusion mechanisms resulting from property laws. Rather, we must consider how expropriation relates to all those mechanisms that keep a person from developing his own lifestyle in a given environment (Breviglieri and Pattaroni, 2005).

What characterizes the motilities that contribute to the 'making' of the city, meaning that which reinforces urbanness? What dimensions in an environment are likely to impede or favor motilities aimed at urbanness? Finally, which qualities define an environment's receptiveness to the motilities that contribute to making the city?

Many of those who aspire to live in the city have one point in common: they value their relationship to otherness and thus difference. The quest for confrontation with the unknown and the opportunity for change on a daily basis are conditions that require receptive, hospitable spaces and, by default, density and diversity. Our empirical data has already illustrated the heuristic advantage of distinguishing movement from mobility. Defining these two notions opens up the possibility of new discussions and, more importantly, allows us to investigate exactly what it is that makes a city a city.

The quest for contact with otherness results in a combination of the three types of space in daily life; individuals with projects that contribute to making the city are characterized by a social inclusion built on a strong presence in all three types of spaces – areolar, reticular and space as a rhizome. Commuting does not makes an individual a member of the community; nor is merely being physically present in public spaces, frequenting our neighborhood or surfing the Internet on the train on the way to work enough to forge this relationship to Otherness; rather it is the co-occurrence of all three.

Our investigations also indicate that an environment's receptiveness has to do with the diversity of its urban forms and morphologies, transportation and telecommunications systems and the potential configurations of these morphologies and systems in a given context.

And yet above and beyond these affirmations our empirical research has allowed us to fine tune our original theoretical propositions. Four points are of special note:

Motility projects that required the urban setting as their residential choice were diverse but not always aimed at change or a relationship with otherness. Put more simply, we can choose the city for its accessibility (i.e. its functional aspects) without having any desire to make use of its diverse services or facilities. At the end of the day people choose to live in the city because it allows them to get where they want to go quickly and thus better juggle the time and space available to them in their sedentary lifestyles. Long-distance commuters and their social practices are a reminder of this.

It is clear that a city's mobility potential does not depend solely on the services and facilities available there; the ergonomics of the public space and transportation were also supports capable of producing mobility opportunities in several of our studies. Spaces that are calm and comfortable in which we feel at home

allow us to be mobile because we can engage in a wide variety of activities there. This was particularly true when it comes to using commute times.

In general our empirical data proves that an environment's receptiveness to residential choices is both limited and highly localized. This point is important: the realm of choices, or field of possibles, is relatively limited and is also contextualized and marked by 'classic' social structure. For those with projects and aspirations not in keeping with contextual norms, realizing projects is often difficult and undoubtedly depends on a certain pugnacity that manifests itself in the form of creativity in terms of bending the rules. Individuals are at odds with this quasi-fluid social and spatial world, whose horizons have been considerably broadened by telecommunication and transportation technology and the many doors they have opened.

Finally our surveys showed that while motility is a fundamental resource for individuals by allowing them to realize their projects and aspirations, not everyone is equally equipped (or gifted) in this way. Using commute times constructively supposes the ability to plan activities ahead of time and concentrate in a public space; making a residential choice in line with one's aspirations implies knowing how to estimate an environment's receptiveness to potential future projects and aspirations and not being blinded by its superficial and sometimes misleading morphological characteristics.

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Chapter 5

The collective motilities that make the city

5.1 Introduction

As we saw in the previous chapter, the degree to which an environment is receptive to individual projects can be quite limiting – considerably more so than we might have believed when we established our original theoretical framework. Let us now look at how public and private action shapes an environment's receptiveness via sedimentation and thus renders a given context more or less open.

Our goal here will be to analyze the decision-making processes behind the realization of urban projects. These processes are characterized by several factors, including the multiplicity of public and private actors involved, their ability to negotiate, coordinate measures and build partnerships necessary for the successful culmination of these projects (i.e. the ensemble of strategies and interests at stake) (Gaudin, 1999; Kaufmann & Sager, 2006). We will then look at how these decisions actually take shape in a preexisting context.

Albeit without minimizing the importance of public action, in this chapter we would also like to emphasize the role of private actors (and economic actors in particular) in determining an environment's receptiveness to projects and even go so far as to argue that their impact on a city's substance and dynamic has much to do with the nature of their motility – or rather the motility differential between economic actors, private actors (like associations) and public actors.

An actor's influence on a given environment can be understood in terms of motility: different actors have specific and distinct motilities. Economic actors' motilities are often strongly geared towards movement which, on the contrary, is

clearly not the case for public actors which by definition are 'anchored' to a given region and whose motilities can therefore only be used for mobility (i.e. change). An analysis of this asymmetry will be a key component in this chapter.

After describing the issues surrounding the motility of public and private actors we will look at the former's motility in terms of mobility (meaning their ability to change) based on the results of a comparative study on transportation policies and urban development.

5.2 The motility of public actors

Public action, decision-making processes, the role of laws and norms, institutional systems and the building of ideas and common doctrine as vectors of change in decision-making processes have all been the subject of vast scientific literature. Research on the role of norms shows their key role in defining the field of possibles with regard to decision-making. The choice of a given noise-reduction measure or policy for instance has a long-term effect on urban development. Norms and conventions in fact serve as a "stable, anticipatory framework that limits uncertainty and structures collective action," (Lascoumes & Le Galès 2004: 12) [Our translation].

Decision-making does not happen in a vacuum, independent of the institutions which in fact define the vertical distribution of decision-making skills, horizontal sectorization/spatialization and decision-making processes – in short, the framework in which policies are made. Research also shows that the configuration of this framework that defines public action is determinative of the nature and content of the decisions made (Le Galès, 2002; Kaufmann & Sager, 2006).

Ideas and beliefs are primordial not only to current decision-making processes but to their influence on earlier policies as well. The city's adaptation to the car for example – a major doctrine of the 50s and 60s – resulted in the creation of road infrastructures that still have a direct impact on the way people get around today although the doctrine itself has long been abandoned. Generally speaking it is worth noting that the analysis of local policies is centered by and large on the role of the perceived cognitive framework – sometimes through the frames of reference of public action, sometimes through the role of political alternation – to propose an image of reproduction and continuity founded not only on institutions and interests but ideologies and political projects as well (Hommels, 2005; Gallez & Maksim, 2007).

The corpus of this literature suggests that the motility of public actors is geared more towards change than movement. Norms, laws, institutions and doctrines in general are apt to *change* the core and substance of an environment's receptiveness

but not to physically *move* it. There are exceptions of course, such as the creation of a community of agglomerations or the fusion of towns – but such cases are rare.

5.3 The motility of private actors

Tackling the question of actors' motility means considering movement and mobility with regard to the economy. We will explore this question before returning to that of the mobility of collective actors in general.

When we talk about mobility in the economy it is important that we distinguish between the mobility of goods and services and that of factors of production.

The mobility of goods and services has always been considered one of the main sources of economic development. Mobility in this case means change and thus the division of work, which many an economist since Adam Smith himself has felt, enables the specialization of means of production and increases productivity.

The mobility of factors of production refers to two distinct phenomena: *Allocation*, or the adjustment of capital, work and remuneration (mobility thus allows economic actors to achieve greater efficiency); and *evolution*, which is economic actors' tendency to position themselves based on the possibility of combining factors of production in order to maximize innovative capacity (Kaufmann et al., 2004).

In these two examples, we find two connotations of movement, the first being physical movement and the second being mobility.

So-called *allocative* or neo-Walrasian approaches insist that *moving* the means of production enables profit. In fact, insomuch as they are able, workers, capital holders *and* companies will all relocate to the context that offers them the best remuneration.

Evolutionist approaches are based on the view that profit results by increasing the opportunities for learning and innovation that movement makes possible, which then are transformed into mobility (i.e. change in position). Factors of production and workers in particular move in order to acquire specific skills or combine their skills with other resources which are all the more diverse because they originate in different places. Evolutionist approaches do not play with spatial disequilibrium but rather seek more opportunities for combination and creation in an uncertain world. These resources (learning, innovation, etc.) are no longer offered by or allocated within the space but instead are built through creative combination (Maillat and Kébir, 1999). In such a system those who win are those who settle in *environmentally innovative milieus* that allow them to participate in the learning dynamics there (increasing competitiveness by increasing differentiation). The less-qualified on the other hand move very little. The end result is

that certain cities and regions are more attractive because of the skilled-nature of the job offer there, while others have a hard time recruiting and retaining skilled workers. Thus can we draw a parallel between the level of skill in a given region and the physical mobility of its workforce (Kaufmann, Schuler et al., 2004).

In both *allocative* and *evolutionist* approaches what differentiates economic actors is their motility, even if it is not expressed explicitly in this way.

- With regard to the capital economic actors, motility refers to *liquidity*, meaning a concrete opportunity to free up and move capital depending on the modalities of the investment. The financial industry has greatly strengthened the motility of capital, whose *raison d'être* is to make the capital invested in economic activity sellable and transferable.
- In terms of work, motility depends on the modes of management used by companies and the laws of the job market.

Albert Hirschman's (1986) distinction between exit and voice is useful in understanding how capital and work are grounded in the local context. Bearers of non-liquid capital invested in productive assets should use their voice to find more efficient, innovative solutions to production. On the other hand, once a financial industry exists, it is possible for capital bearers to buy and sell assets without ever having contact with the company's management organ. By making capital more liquid the financial industry has conferred it with even greater *exit power* with regard to companies, regions and countries, enabling us to better appreciate how loosening sanctions on the movement of capital (towards liberalization at the regional, national and international levels in particular) is a crucial issue. The growth of the financial industry, the increase in the motility of capital and the negotiating power of capital bearers are three interrelated factors that characterize the 1980-2000 period.

We understand through these changes that the motility of economic actors is the key to their ability to make profit. Motility has changed over the past decades largely due to free trade agreements, the growing importance of the financial industry and the increase in speed potentials of transportation and telecommunications systems. This transformation has clearly favored companies whose motility is movement-oriented, to the detriment of those whose motility is mobility-oriented; free trade agreements now offer new outlets for products, and the development of low-cost transportation and telecommunications systems now makes it possible to move production based on opportunity.

This transformation has also resulted in the widening of the gap between public and private actors' motilities. Because of the liquidity of the financial industry, shareholders are those whose motility is most movement-oriented. The increase in the mobility of capital via the financial industry has conferred capital with even greater freedom. The increase in the mobility of capital and exit power in the

face of other actors (producers of goods, regions, nation states, etc.) without such mobility changes the power relationships and, consequently, the prices, locations, etc. as well. Public actors' motility on the other hand is the one that is least oriented toward movement, as we have just seen. Their space of reference is areolar, and in some ways they are tied to it, even if their attempts to move have increased with supra-communal regroupings, off-shore university campuses and incentives for visiting doctors or hospitals abroad where health care costs are lower.

In short, the mobility of the main factors of production has increased considerably over the past 20 years but in very distinct ways. For capital it has meant that mobility now goes hand in hand with the development of the financial industry and the increase in returns; liberalization, the development of information technology and telecommunications and the constant perfecting of new services by the financial industry have all led to extremely fast-paced traffic at the global level. Regarding the workforce, the distances travelled by commuters for training retreats or business travel, the migration of skilled individuals and other forms of mobility have likewise increased. This growth however is limited in that travel and commuting, while more comfortable and less costly, are nonetheless time-consuming.

5.4 Three suggestions regarding actors' ability to change the receptiveness of a given environment

Our brief overview of the motilities of public and private actors highlights both the transformation of the motility of certain economic actors and the resulting asymmetry between public and private actors' motility.

What is the impact of the transformation of the motilities of collective actors on the city and region? Three dimensions came to light during our analyses. Remembering our goal of testing theoretical approaches with the field itself we propose defining and illustrating them using the results of two comparative studies on policies of access to the city – a decisive element when it comes to environments' receptiveness.

1. A city's substance largely depends on how attractive it is to private actors, whose motility can be oriented toward movement and/or mobility, for realizing their plans and projects. The attractiveness of its substance is the result of long-term sedimentation.

Be it investors, businesses, associations or any other type of collective, an environment's attractiveness is largely the result of past actions and is therefore both procedural and recursive. The classic example of the industrial urban wasteland appropriated by the 'creative classes' is certainly one of the best in terms of illustrating this phenomenon: its existence is the result of movement (in this case,

most likely the relocation of production facilities to outside of the city, a different city or country). This also means that collective action has meaning with regard to the movement and mobilities of past actors and, more specifically, that the impact it has is dependent on this history.

2. Insomuch as the motility of public actors is not oriented toward movement, their impact on a city or region lies in their ability to transform it, meaning to be mobile in order to make the context receptive to a wide range of projects.
Our findings show that making a context more receptive to projects is not only a question of providing the economic and legal conditions necessary for its realization – it also goes back to the four spaces we identified earlier (the dwelling, social, functional and commercial spaces). We found that the ability to make a city pleasant to live in or visit was central in terms of increasing its receptiveness.

3. Public actors' capacity to transform a city and make it receptive to a wide range of projects is strongly linked to coordination efforts between public actors and their ability to negotiate with private actors.
Considering the complexity of public decision-making, coordination is in fact a key dimension when it comes to transforming a city or region. Specifically our research shows that when public actors share a common vision, their power to negotiate with private actors increases considerably.

These three observations, which originate from our research on policies of access to the city, demonstrate how public actors are to get the upper hand vis-à-vis economic actors in controlling urban development. Zoning laws, fiscal allowances, urban marketing policies, development and cultural facilities, for example, are by and large publicly-controlled and thus likely to have a major impact on an environment's receptiveness.

We shall now illustrate these findings with a detailed presentation of the results of our studies on urban access policies.

5.5 Empirical explorations

In a context where modes of transportation and telecommunications are constantly increasing, urban transportation policies have become essential to public action when it comes to transforming a region and thus enhancing its receptiveness to projects (of private actors most notably). As these policies concern the reticular space (and therefore require high-level coordination), they are not in keeping with the areolar space of decision-making or the "sectorization" of public action in the housing, transportation infrastructures and urban development fields.

This context – a relatively new one – can be explained in part by the gradual bursting of the Russian doll configuration of regional relationships. While in the 1950s coordinating development and transportation was a town issue, the situ-

ation has become considerably more complex since. In short, in less than forty years we have gone from what were once issues at the city-level to multi-disciplinary issues involving development, transportation management and environmental services that call for horizontal and vertical collaboration between various institutional actors at all levels.

In such a context the coordinating of transportation and development is especially relevant as a field of empirical analysis when looking at public actors' ability to change an environment's receptiveness. We will start by looking at the motivations and processes that underlie ad hoc decision-making processes based on two comparative analyses (Kaufmann and Sager, 2006) and then move on to tackle the question of how decisions – ad hoc or otherwise – change an environment (Pflieger et al., 2008).

5.5.1 Three axes that structure ad hoc decision-making

The horizontal and vertical coordination of public policies is generally approached from a unidisciplinary perspective, where only factors relative to the mode of government (or rather governing) are considered (Kaufmann et al., 2003). It is essential to broaden this narrow perspective if we wish to address the practices that underlie decision-making as the quality of this coordination cannot be reduced to the simple geography of institutional divisions, power structures or the actors involved.

In addition to the impact of the institutional structure and the logics of action that underlie political action, this question also allows us to address the impact of professional practices and cultures on how ties between urban development and transportation are conceptualized and related policies coordinated. Based on this analysis we can better scrutinize the impact of the receptiveness of an environment's preexisting morphology and transportation supply on coordination.

The analysis presented here is based on case studies done in the Swiss cities of Bern, Basel, Geneva and Lausanne. While comparable in size (300,000-500,000 inhabitants), the four cities are very different in terms of culture (German-speaking vs. French-speaking), geography (trans-border or not), institutions (strong or weak communal autonomy), urban form (density) and use of transportation. These cities are also characterized by the proximity of the links between land use and public transportation systems, which makes a comparative approach all the more useful.

Our case studies aimed to highlight the combination of logics of action at work in the development of projects with an urban planning dimension versus those with a transportation dimension. And so we looked not only at project development (its context and objectives) but also at how the actors involved positioned themselves and interacted and in this way enabling us to explore the full

breadth of the coordination process – allowing us to put global concepts and coordination systems to the test in practice – as a system of social action. Three factors determined our choice of case studies:

- The degree of advancement with regard to the decision-making process;
- the different institutional levels involved in the project;
- whether or not the projects had a trans-border component.

The following cases were selected:

Basel: the Claragraben trolley. This project (not completed) consisted in the realization of a light rail line, the goal being to increase existing transportation service in the north part of the city. The project's impact would have been limited to a localized, highly dense urban zone.

Basel: the S-Bahn's green line. This project (completed), part of a larger project aimed at creating an express train network in the Basel region, consisted in developing new diametral train services using existing infrastructures. The green line was a trans-border (Franco-Swiss) project, which complicated decision-making processes and coordination issues.

Bern: the Wankdorf hub. This project (completed) consisted in planning a new commercial zone that included a highway junction, train station/trolley terminus, hub providing jobs (and boasting a football stadium), shopping center, leisure facilities and Park & Ride parking lot. The project was located in an (as of now) low-density area and involved partnerships between public and private actors.

Geneva: the Rhone Express Regional. This project (completed) consisted in revamping the train service between the city center and western part of the canton of Geneva using existing infrastructures. The project, located in a low-density urban area, had impact at the regional level. The terminus, originally located at the Franco-Swiss border (La Plaine), was then extended to Bellegarde in France.

Geneva: the Praille-Bachet-de-Pessay hub. This project (completed) consisted in rethinking and redesigning access to the southern part of city. Located at the junction of a highway and major public transportation hub, the project was very similar to Bern's Wankdorf project (football stadium, shopping center, hotels and cultural facilities, Park & Ride lot and train station) and was characterized by the strong implication of private actors (stadium and shopping center developers).

Lausanne: the Lausanne-Echalens-Bercher extension. This project (completed) consisted in extending regional rail service to the city center and developing a hub at its new terminus. The project, which was located in a high-density area, was aimed at restructuring Lausanne's commercial zones and involved public/private partnerships.

These six cases studies highlight five founding principles of ad hoc decision-making involving the transportation and urban development sectors (Kaufmann and Sager, 2006).

1. Institutional structure as a facilitator of ad hoc coordination

These studies show the importance of internal coordination among administrative bodies and ad hoc committees in the decision-making process. Three dimensions stood out:

- Clearly defining each entity's role. The clarity of the organogram, typical of the Basel and Bern case studies, encouraged each actor to adopt a role and take a position. In doing so the ad-hoc committees in the three Germanic case studies faced no ambiguity with regard to each actor's role and the distinction between the political and technical was formalized.
- The time required for the overture of the networks of actors involved in the decision-making process. Our case studies found that systems with open actor networks, like the first phase of the Basel S-Bahn and Praille-Bachet hub in Geneva, often favored power struggles over project logics. In contrast, systems with closed networks comprised only of actors that were financially involved favored project logics. Insomuch as the circle of actors involved changed depending on the goal, we observed that ad hoc committees facilitated decision-making.
- An ad hoc committee's efficiency is due in part to the absence of an intermediary. Our studies found that such cases favored project-based dynamics over power struggles. This third observation was even cited by several of those interviewed for the Bern case study as 'the golden rule' of ad hoc decision-making.

2. Financing as an incentive for coordination

The ground rules set by coordination when it comes to financing infrastructures offers a framework of opportunity that can be seized by local actors; it is in this way that several projects have been funded thanks to financing by the Confederation Suisse (i.e. the State). The Lausanne-Echalens-Bercher extension for instance and the Claragraben light rail respectively received 40 million CHF and the equivalent of 15% of total investment from the State.

Our studies show that financial planning was a major incentive in negotiations and coordination between urban planning and transportation groups. While framework laws defining the political objectives were useful in term of providing projects with a line of argument for launching them, incentive laws were decisive in moving from idea to actual project.

3. The preexisting morpho-geographical context as an opportunity or an obstacle
Our case studies show that the morpho-geographical context shapes how an issue is approached. In the Geneva and Lausanne cases most interviewed did not think it was possible to link future urbanization with public transportation infrastructures. "People settle according to highways and there's nothing we can do about it," confirmed one Lausanne manager, his justification being the current peri-urbanization in the Lausanne region and communal autonomy with regard to land use planning. In much the same way did the Praille-Bachet hub prove how difficult it is to reorient planning for a sector that has been urbanized according to automobile metrics toward multi-modal access. Conversely, the indivisibility of the urbanization/public transportation combo observed for Wandorf in Bern comes down from past political choices and still helps forging the professional cultures of urban planners and transportation engineers by serving as a model.

4. The catalytic effect of a shared environmental standard
Our case studies indicate that ecological awareness also has an impact on the relationship between urban planning/transportation and coordination. These values, made norms by federal (Opair, OPB) and cantonal (Geneva law on public transportation) laws, proved important in all our case studies. More specifically our findings indicate that the catalyzing effect of ecological values is closely linked to the question of a standard for public action by Muller's definition (2008). When ecological values are shared by all the actors involved (meaning they actually become part of transportation or development policy standards), their impact is all the greater. Basel's S-Bahn trans-border green line is undoubtedly the most revelatory example of this. The catalyst for the project originally came from Switzerland but has ecological values shared by all actors involved. In France, where ecology at that time was neither part of the political agenda nor a central theme in standards for public action in the transportation or development fields, the project was met with little enthusiasm. In spite of the skepticism (and thanks to the pugnacity of the Helvetian partners who were convinced of its ecological importance) the project was ultimately completed.

5. The ambivalent influence of professional cultures
Our findings show that two factors were critical with regard to professional cultures:

- In coordination processes different professional cultures can be a strength.

This was particularly true in the case of ad-hoc committees, where all the actors involved were financially implicated and shared the desire to succeed. The diversity of experiences and ways of working were a source of enrichment to the project. In other configurations however, especially when the networks were very open or marked by institutional power struggles, they were quite often a source of conflict.

- Coordination is a constitutive element of professional cultures. In Geneva, Lausanne and Basel, where we observed weak 'ad hoc coordination culture' between engineers and urban planners, the projects were either transportation-based (like the LEB, Rhone Express Regional, and S-Bahn green line) or development-based (like the Praille-Bachet hub); in either case forging a link with the other field was the goal of the coordination. This sometimes resulted in difficulties in terms of creating mutual coherence, such as in the case of the Praille-Bachet hub where the locations chosen for the shopping center, convention center and hotel in fact limited the possibility of joining up with public transportation infrastructures. In others it led to conflict within the committees responsible for the coordination, as was the case for the Claragraben light rail. In other cases still – like the Rhone Express Regional and Basel green line for instance, both of which lacked urban planning dimensions – the link was never made. Bern on the other hand had a strong ad hoc coordination capacity resulting in the integration of both urban planning and transportation dimensions in a single approach from the project's very genesis.

The five catalysts for ad hoc decision-making highlighted above are obviously not independent of one another but rather structure and sequence themselves in a dynamic way that results in decisions. Our analyses found three main areas that influence ad hoc decision-making:

Area 1: From legitimacy to ambition

In cases where concern for the environment is legitimate the link between urban planning and transportation favors public transportation, which means major aspirations in terms of coordination. In contrast, in those contexts where ecological consciousness is less developed the link between the two fields tends to favor road networks, thus implying weaker coordination goals.

Several factors are likely to favor one dynamic over the other: partisan power struggles at the local level for one, which help establish the political legitimacy of the ecological action, combined with professional cultures and the morpho-geographical context, both of which contribute in an important way to defining a field of possibles for the link between urban planning and transportation. The extent to which the actors in question are involved, which in turn determines the quality of the operational procedure used, depends implicitly on these factors.

Area 2: From power struggle to action

Two dominant decision-making logics – in some cases corresponding to the phases of the project and in others the entire process – have been updated based on these case studies. The first is the logic whereby actors confront each other in a power struggle – the overriding issue being the recognition or affirmation of

one actor's dominancy over. The second is the logic whereby actors work together towards a common goal – the overriding issue here being the realization of the project regardless of the compromises this might entail.

Different factors tend to favor either power struggles or a project-based logic: the sharing of values and goals, particularly with regard to respect of the environment, the transparency of institutional guidelines within administrative bodies, a network of actors limited to those directly involved with the project and potential national funding all favor action. Weak legitimacy with respect to the environment, muddled institutional guidelines or the kind of open network of actors associated with sectorialized professional cultures on the other hand favor conflict.

Area 3: From ambition and logics of action to the project

Actors' goals and involvement in a given project do not naturally result in exemplary coordination; coordination between transportation and development must be set within a legal framework. More specifically, the plans, legal frameworks and funding sources must provide opportunities for such realizations. In our corpus of case studies the Basel S-Bahn urbanization relationship and its legal consequences were in this way decisive in terms of guaranteeing the exemplary coordination we observed in that city.

At the legislative level we again noted a lack of laws at both the federal and cantonal levels that might serve as a financial incentive for such coordination efforts, which means that coordination was more often an obstacle than an asset when it came to funding projects. The Lausanne LEB extension is emblematic of this; as federal funding opportunities for the project originated from railway legislature, this sector alone was responsible for the handling of the federal boon.

Contextual differences

The contextual differences with regard to the link between transportation infrastructures and urban development in these cities can be read the following way:

Goals for coordinating urban development and transportation were more limited in Geneva and Lausanne than Basel or Bern due to weaker legitimacy with respect to the environment and decreased receptiveness as a result of earlier policies.

In the Francophone cases and for the Claragraben trolley it would seem that goals were not set, resulting in the see-sawing of coordination efforts to define the coordination goals for the project on the one hand and its gestation on the other. The Wankdorf hub and Basel green line projects however met the shared goals established by the actors at the start.

Coordination goals are inextricably linked to the different ways and opportunities for developing projects. Thus we can distinguish between cases where the opportunities seized are the result of planning documents and those where

opportunity is mostly funding-oriented and linked to the State. In the first case we find more ambitious projects, like Bern's Wankdorf hub, the Basel green line and Geneva's Rhone Regional Express (which was part of a 2005 public transportation project that made no provision for linking urbanization and public transportation infrastructures). Lausanne's LEB extension, Geneva's Praille-Bachet hub and Basel's Claragraben light rail are all examples of projects that seized outside funding opportunities.

The studies we have just presented illustrate how actors' mobilities in terms of decision making largely depend on their ideas, alliances, pugnacity and ability to negotiate; they also depend on the preexisting morpho-geographical, social and cultural context. More importantly however, they show that changing an environment's receptiveness depends partly on past decisions (in the form of artifacts, infrastructures, social relationships and lifestyles) that have become permanent fixtures in the environment.

5.5.2 Long-term mobility of public action: from trajectories to paths of change

Now that we have explored the motivations behind ad hoc decision-making we will consider the long-term impact of these decisions on the environment. Decisions result in realizations – material or otherwise – which as we have just seen are likely to change an environment. We also know that the impact of a decision on a given environment is contextualized and depends largely on the receptiveness of this decision in the preexisting context.

To explore these issues in greater depth we will use data from a comparative study of six cities (Oldenburg and Karlsruhe in Germany, Clermont-Ferrand and Grenoble in France and Lausanne and Basel in Switzerland) at two levels: the first – international, as the studies were conducted in Germany, France and Switzerland – allowed us to control for the impact of each country's laws and norms as well as the overall frames of reference that drive the field; the second looks at cities of comparable size (300,000-600,000 inhabitants) within each of the countries (Pflieger et al. 2008).

For the second, we made our selection based on commuter practices (measured by the rate of car ownership and daily use of transportation modes). For each country we selected one city characterized by heavy automobile traffic and another by frequent use of other modes. For the purposes of our study and in order to verify the presence of best practices and compare them, we chose cities with opposite extremes in terms of transportation use.

We analyzed the trajectories of each with regard to transportation and urbanization from 1950 to 2000 relying on three prime sources: a selection of articles on transportation and urban development since the 1960s from the local press,

a survey of documents and public reports on major development projects in the different cities as well as long interviews with key actors (decision-makers, elected officials, technicians [active or retired], heads of popular user groups and political parties). The interview questions and documentation we presented our interviewees with were designed to jog their memories for the ten to fifteen year-period in question.[12]

Six complete historical monographs detailing the trajectories, major development trends and changes in public action identified in each of the cities over the last fifty years were then compiled. These monographs made it possible to identify three specific dimensions that underlie these trajectories with regard to transportation policies and urban development – reproduction, innovation and contingency. We found all three present to varying degrees in each of the six cities.

Reproduction

Because of their regularity, continuity and cumulative dimension, the trajectories of urban development and transportation policies in Clermont-Ferrand and Oldenburg were typical of long-term reproduction that neither innovation nor contingent events had any impact on.

In Clermont-Ferrand this inertia was fed by the functionalist ideal of spatial organization, a cognitive-type variable that hinged on two main dependency factors – spatial morphology, shaped by a policy of social specialization in the district's urban center (as well as strategies used by inhabitants to escape it) – and the road infrastructures that go along with socially-fragmented central/suburban development. No event contingent or otherwise has interfered with this inertia to date.

As such we cannot speak of paths of dependency in Clermont-Ferrand; its development has non-contingent roots marked by the construction imperatives of social housing and is emblematic of the classic spatial organization models and road networks promoted by the French ministry of public works and its decentralized bodies. This infrastructure ideal was further reinforced by a stable political/ institutional government and the economic domination of the tire industry. Between 1945 and 1997 the city of Clermont-Ferrand had only two mayors. Though in the early 50s the city enjoyed one of the most meshed trolley networks of its time the automobile industry's growth only heightened the impact of increasing car use on the Auvergne capital and, consequently, the need to remove trolley lines. Regarding public housing policy, the 'Michelin cities' played a structuring role all the way up through the 1960s, at which time the company gradually started moving out of Clermont and passed the buck to the city. The city got

[12] For urban projects and transportation policies that are less than five years old our monographs were unable to take into account the impact of such recent changes due to a lack of distance time-wise.

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involved in the creation of public housing *en masse* at this stage in an effort to promote socio-demographical stabilization and specialization.

The attempt at innovation that was introduced either supported the preexisting trajectory, such as in the case of Clermont-Ferrand's Jaude Center (one of France's first inner-city malls), or failed to change it, in instances where innovation actually went against the dominant trend. This was especially true with regard to public transportation. Parts of the exclusive lane were realized at the end of the 1970s in an effort to make public transportation more attractive. At the same time subsequent development projects were put on hold due to lack of funds. At the end of the 80s communists proposed re-launching an exclusive lane public transportation project not so much to limit car use as to save urban public transportation from bankruptcy. But it was not until 1995 that a north-south trolley line project was proposed. In 2001 Serge Godard's socialist municipality launched a new call for tenders for pneumatic equipment, and since 2006 a tire trolley has been running on Line 1. However, due to funding restrictions by the State, the measures that normally accompany trolley projects (such as restricting automobile access to the city center and urban renewal policies) were done away with.

A similar process took place in Oldenburg, where social-democrat Hans Fleischer was mayor from 1955 to 1981. Right after the war new public housing projects were built, thus changing the city's morphology by spreading out development rather than concentrating it at the city's limits. As a result the old city center lost nearly 40% of its inhabitants between 1950 and 1960. Lower Saxony likewise invested in road infrastructures with the hope of turning Oldenburg into the Weser-Ems region's showcase city. And so an expressway equipped with a bypass of the city center was realized. This new road, as a direct consequence of increasing car ownership, brought the development and transportation sectors together for the cause of managing rising traffic flows. In 1964 traffic on the bypass had already reached maximum capacity at 21,000 vehicles a day. The creation of parking lots and foot traffic-only areas became a top priority. In 1967 the old city center, where the municipal authorities bought land in the center to build indoor parking lots, became the first pedestrian-only area in Germany.

These changes sparked off numerous conflicts because of the disparate interests of economic actors, residents and the burgeoning environmental defense milieu. Increasing environmental awareness led to several failed attempts to reorient urban transportation policy towards public transportation due in part to low urban density (which meant that making efficient public transportation services profitable was difficult), competition from the bicycle and easy access to high-quality road networks.

Faced with declining use over the course of several decades, a 1994 study on urban transportation proposed ideas for major improvements but had little impact. Ultimately it was the railroad that brought about a public transportation renaissance in the Oldenburg region, albeit on a different scale. In 2000 a subsidiary of Connex and Osnabrück's public transportation company made vast improvements in its scheduling, speed, punctuality and material hardware. Their efforts were met with instant success; the number of passengers increased by 70% and 50% respectively in the first two years. In spite of this success later development projects (a trolley-train in the Breme region proposed by the region's trolley director who had worked for a long time in Karlsruhe) were postponed for reasons of potentially insufficient use. The innovation, meant to change Oldenburg's trajectory, in reality systematically ran up against strong reproduction dynamics.

Innovation

The cases of Grenoble and Lausanne are symbolic of the effects of socio-political rupture on a trajectory. In both instances do we see strategies of innovation coupled with reactions to earlier development trends and models. These trajectories, which were innovative in that they were the result of a critique of earlier models of urban organization, also introduced new ideas about linking urbanization and transportation. In both cities innovation gradually turned into reproduction, each in its own distinct way. In Grenoble the trolley was a profit-maker, whereas the major development projects set out in the 1973 metropolitan (CIURL) general development plan were to serve as a 'roadmap' for transportation policy in Lausanne for the next thirty years.

Up until the end of the 1970s Grenoble's trajectory was identical to that of Clermont-Ferrand; both were founded on hefty public housing policies and new highway infrastructures (albeit more gradually in Grenoble than in Clermont-Ferrand). Nonetheless at the end of the 1970's, public action changed directions at the local level. Having received a great deal of media attention for the trolley project, this rupture had not only to do with the creation of a service but with the trolley's being used in favor of a structuring, city-level policy built around a strong hub.

The trolley project figured prominently in the 1983 municipal campaign; Hubert Dubedout made it part of his electoral platform. The right wing proposed putting the trolley project up for local referendum. Alain Carignon, elected in 1983, organized the referendum in less than three months. Grenoble residents voted 53.09% in favor of the trolley, giving the mayor's project legitimacy with regard to the right-wing majority (though one party still remained openly hostile to the project) and putting him in a position to request special State subsidies.

From that point on the trolley project was used as a bargaining chip for dealings between the inner city and outskirts. Alain Carignon again argued in favor of developing the city center based on public transportation, his goal being to strengthen the city center's role in structuring the agglomeration and at the same time leaving more room for private initiatives. He liberalized the downtown land market and refused to counteract the trolley's impact on the real estate market. The trolley became operational thanks to a series of subsidies aimed at urban renewal. Thus were the municipalities able to realize their development projects at a reduced cost.

The creation of non-car-oriented access to the city center nonetheless combined with the goal of improving traffic flows at the end of the 1980s; the southern ring road went from two lanes to four and the north-south section was extended. In this context the extension of the development of public transportation services to beyond the metropolitan area was not a consideration. As a result regional rail service is still lacking for a city of 300,000 inhabitants. At the city limits a parallel trajectory, oriented towards automobile access, has also taken shape, resulting in the deterioration of urban spaces, traffic congestion and ongoing urban sprawl. This second trajectory, characterized by inertia, is partially fueled by the innovation of the first due to policies limiting traffic in the city center.

In Lausanne the reproduction process was stronger than that of innovation; even the reorientation of the entire development trajectory by institutional upheaval proved ineffective in provoking change.

Lausanne's development was likewise typical of urban development trajectories in Western Europe in the 1950s – public transportation networks were exhausted, the existing trolley system was dismantled and the automobile began booming. Shortly after the inauguration of the country's first highway between Geneva and Lausanne in 1964, the reproduction process nonetheless saw an inflection at the institutional level with the creation of a supra-communal decision-making body charged with developing a vision of transportation for the future. The metropolitan community for urban development in the Lausanne region was thus created in 1968 (quite early by French-speaking Swiss standards) in an epoch where communal autonomy was and still is more or less unfathomable. In 1973 the first overall development plan for the Lausanne region – ambitious in its way – proposed to reorient planning and development. Chartered by Lausanne mayor Georges-Andre Chevallaz the opening statement confirms that Lausanne is from that point on an urban agglomeration and that city and regional planning requires sacrifices, such as the diminution of individual freedoms for the common good. He even went so far as to say that "[t]he regional master plan cannot just be the juxtaposing of plans that have been autocratically decided upon by the communes: it demands mutual consideration, even sacrifice". The master plan likewise confirms

that local development measures prove ineffective when it comes to responding to the issue of the geographic dispersion of activities caused by increased car use, especially as intercommunality did not yet exist and constructions were by and large developed outside of buildable areas. To respond to these somewhat undesirable conditions the 1973 regional master plan proposed 1) to no longer extend buildable areas in the Lausanne region, 2) to improve the transportation system by favoring the mode of transportation best adapted to each area, 3) to develop sub-centers and 4) to better protect the sites. It was voted down however by the agglomeration's counties as being too restrictive and was ultimately the cause of the disbanding of the CIURL. The COREL (the community of counties of the Lausanne region), with considerably revised (i.e., less ambitious) goals in terms of intercommunality, succeeded it, but forewent development of a new master plan.

The metropolitan community's innovation thus ran up against communal autonomy. After such institutional failure Lausanne could have changed gears and switched over to a trajectory similar to that of Clermont-Ferrand or Oldenburg; and yet, it did not. Despite the official abandoning of the intercommunal master plan the major projects included therein were nonetheless completed one after the other: a trolley in southwestern Lausanne (the current M1), the Lausanne-Echallens-Bercher extension to the city center, the Ouchy-city center-Epalinges subway line and the building of a Park & Ride lot. The master plan nonetheless has served as the de facto 'roadmap' for transportation and development policies in Lausanne for the past thirty years; as such, its power for innovation has metamorphosed into reproduction.

Contingency

The third form, which we observed in Karlsruhe and Basel, is organized around contingency. In both cases in fact the trajectories we saw were marked by highly specific, contingent choices, thus going against prevalent choices for the transportation field. In both cases the initial choices, strengthened and reproduced thanks to stable cognitive and institutional frameworks, wound up turning innovation into pathways of dependency.

Like Basel and Bern, Karlsruhe is among the few cities in Western Europe not to have eradicated its trolley system following the War – the result of two contingent and successive events which were to have an important impact on the specific local context: the relocating of city's train station at the beginning of the 20th century, which prompted the city to organize multiple poles around the trolley line within the city center, and the arrival of three individuals responsible for heading the city's public transportation system at the end of the 1970s and who went on to develop a new concept in public transportation: the trolley-train. Since its founding in 1715, Karlsruhe has been the very symbol of urban innovation,

which has been the cornerstone of an urban culture of major public works and intercommunal collaboration, likewise allowing for a shift towards a second path of dependency nonetheless rooted in the first: the relocation of the train station in response to railroad issues. In 1843 Karlsruhe's main train station was inaugurated in the southern part of the city near the Kriegsstrasse. In 1902 the government of the province of Baden decided to move the station. This move, affected in 1913, had one major drawback – it cut off the Albtalbahn railroad line, which served the southern part of Karlsruhe, forcing users to take a trolley to get to the main station. In 1957, in order to compensate for this inconvenience, the city of Karlsruhe bought and revamped the Albtalbahn, and in 1958 made it part of the city trolley network – the genesis of Karlsruhe's public transportation model.

And yet Karlsruhe is not a city where public transportation is particularly well-developed; in fact it has one of the highest rates of car ownership in all of Germany. The difference in development traditions alone does not explain the continued existence of a meshed trolley system. In 1958 for instance the municipal council made an urgent move to create new parking spaces. The prevailing post-War trend to eliminate trolley networks however was not adhered to in Karlsruhe. Proposals to replace trolley lines with buses did not muster a great deal of support either due to the city's recent investment in the Albtalbahn link. In 1960 the municipal council, presided over by Günther Klotz, decided not only to keep the trolley network but to extend it. At the time trolley advocates and adversaries could be found in every major political party, but its existence today is due in no small part to mayor Klotz, a major railroad supporter as well as a pioneer in transportation policy. From this point on the push towards modernizing and extending Karlsruhe's public transportation system was underway.

It was at this time that innovation shifted from urban planning to public transportation, and in doing so made way for a new model – the trolley-train. The transfer at the city's main station's traffic is often cited as one of the major inconveniences of regional public transportation in Karlsruhe. To solve the problem of the link between the city center and outskirts three engineers came up with a new public transportation model that was both local and contingent. The masterminds behind the idea of putting a trolley on local train tracks were three old friends: former students at the University of Karlsruhe: Professor Gerhard Bernstein (University of Karlsruhe railway section), Horst Emmerich (German Railways) and Dieter Ludwig (director of urban and regional public transportation) – a trio that united key players from the transportation industry, city and research sector.

In 1983 a study proposed linking Karlsruhe and Bretten as a test line. A flat rate (one lower than progressive rates) and the creation of new stations in heavily populated areas were deemed necessary. Time phasing, flat rates, well-planned connections and express lines were also proposed along with the new trolley-train

line. Between 1985 and 1999 the number of users rose from 62 million to 130 million; the network itself grew from 88 kilometers to more than 400 and the city suburbs finally had a direct connection to the city center.

In Basel we also observed much contingency with regard to its trajectory as a city; the maintaining of its trolley network – a constitutive ingredient of Basel politics – is largely based on elements of contingency. Such facts characterize the city's trajectory by a path of dependency at the urban level, marked by a policy that was innovative for its time because of its pioneering development of public transportation and soft forms of mobility, all the while aiming to restrict the car's place in the city, especially through stagnation in the number of parking places.

This policy nonetheless becomes tenuous once we change the scale of our analysis. At the trans-border level the result is the stagnation of the population in the city center and the dispersion of activities (especially commercial ones) throughout the Bâle-Campagne region as well as in France and Germany.

Possible fields of public action

Highlighting these three mechanisms shows that different contexts offer different possibilities in terms of public action. In each of the cities we looked at we observed factors of inertia (technical, morphological, political and institutional) in varying degrees of importance and unique configurations. The diverse nature of this inertia, which might lead us to believe that total rupture, alternation and political volunteerism are the only vectors of change, is a decoy, and the true impact of introducing a new mode of exclusive lane public transportation in an area can only be understood using a systemic approach. In Lausanne for instance major transportation projects are often realized without the encouragement of the institutional context.

The specific nature of opportunities in the matter of transportation policies shows the limitations of a deterministic view of public action that regards it as powerless against the rigidity of time, which moulds an environment. A given environment makes specific actions possible when we take into account of course the many paths that cross it. An action can either be in harmony with or in opposition to its context. In terms of developing exclusive lane public transportation our findings show that of the four cities studied, Karlsruhe and Grenoble were both in contexts of congruity; in both cities the creation of new infrastructures was supported by norms and values that were favorable to it as well as by urban morphologies facilitating their realization (compactness of urbanization in Karlsruhe and density in Grenoble). In contrast, tire trolleys and light rails in Clermont-Ferrand and Lausanne were clearly at odds with the dominant context in those cities: neither the institutions nor the urban morphology nor the norms or values supported them.

Change with regard to transportation policy is 'localized' differently depending on the city. If we take for instance a policy aimed at modal shift, the action levers required to 'activate' differ accordingly:

- In Karlsruhe transportation and urban planning policy are closely linked with paths of innovation and thus provide fertile ground for testing new solutions. Consequently, public action results in veritable realizations through the implementing of new ideas.
- In Clermont-Ferrand the path of socio-technical inertia we observed is such that creating a modal shift must go through urban renewal and housing policies aimed at minimizing social segregation in the inner city, which ultimately supposes strong intercommunal ties.
- In Grenoble a political path guided by an environmental shared global framework has led to the realization of numerous projects in that city. Adopting a policy aimed at promoting alternatives to the car in such a context above all means working outside the city limits by increasing the rail supply *to* it.
- In Lausanne, considering the institutional dependency we observed there, the first priority in terms of policies aimed at modal shift should be the creation of a veritable supra-communal body, followed by the development of a shared set of standards (i.e. what Grenoble did from 1970-1980).

5.6 Conclusion

At the beginning of this chapter we demonstrated that the motility of public and private actors was marked by fundamental asymmetry; public actors by and large are condemned to turning their motility into mobility while private actors often have more leeway and can turn their motility into mobility *or* movement. We might even add that the boom in the financial industry since the 1980s has in fact encouraged private actors to adopt strategies of movement.

Strategies of movement naturally pose a challenge to cities and regions in that they make them compete unequivocally. Their receptiveness to different activities and different actors' projects is at the crux of their dynamic. Public actors' ability to be mobile, thereby making the context they govern more attractive and better able to respond to the movement strategies of private actors, is therefore fundamental.

Our analysis of the factors likely to favor public actors' mobility with regard to transportation and urban development policy showed that mobility depends on the actors and their negotiation skills as well as the morpho-geographical, social and cultural context in which they exist – a finding that is valid both for decisions *and* their concretization in the form of artifacts, infrastructures, laws

and procedures. In other words a decision and its realization do not necessarily have the same impact everywhere. The impact of political action on a given space can only be transferred to a context that is comparable in terms of the entrenchment of policies. Consequently, a 'good' practice is only so in a given context – an important finding demonstrating that an environment's preexisting receptiveness is in itself a factor, resulting in the distribution and localization of opportunities for change. The fact that an environment is marked by logics of reproduction or a tradition of innovation changes the options with regard to action. In the same way the contextual opportunities for changing the policies it provides is also important. We saw this with rail infrastructures in particular: it is easier to pursue a policy of urban development that is based on rail infrastructures when they form a well-developed network rather than a weak or non-existent one, regardless of the strength of the political will to do so.

Our examination of the trajectories of Basel, Clermont-Ferrand, Grenoble, Karlsruhe, Lausanne and Oldenburg shows that when it comes to increasing or decreasing their receptiveness, cities can get caught in a virtuous or vicious circle, and that a change of direction often happens by accident (as in Karlsruhe) or is the result of massive investments (as in Grenoble).

With regard to the theoretical proposition we made regarding an environment's receptiveness to projects, all of these findings show that public actors lack the means for conducting mobile action aimed at change – even when they share a common and relevant vision, make efforts to coordinate, etc. The region and everything that exists within it – built over time and rooted in culture, social relationships and lifestyles – plays a key role in fostering both change and, on the contrary, immobility.

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Chapter 6

Artifacts and motility

6.1 Introduction

In the preceding chapters we saw how it is that an environment's material dimension is critical in terms of defining its substance and dynamics. While material artifacts provide footholds for individuals' projects, they are also central in attracting social actors to a region as they contribute to defining the scope, nature and diversity of its receptiveness.

In this chapter we will look more closely at our analysis of the material dimension of the city. Our general overview of what makes a city (or region) just that leads to our questioning the role of its material dimension and urbanness in the scope of the field of possibles with regard to receptiveness to projects and, more precisely, configurations and conditions that beget it to a greater or lesser degree.

I will set about this task in three stages. To begin, I will establish an analytical framework that will allow us to appreciate the material dimensions of a region and their creation using empirical analyses.

6.2 Artifacts and sedimentation

Before going any further it would undoubtedly be useful to remember our position in this analysis. Rather than engendering dualism between an immutable context that imposes itself on its actors and the idea that actors are capable of changing it, this joint-construction must be reestablished in a temporal context, as we saw in chapter 5. Thus, as illustrated in the preceding chapters, I will

continue to avoid a mutually exclusive approach that separate the material and formal worlds that form a framework in which social practices and action take place.

Our position and approach with regard to regions – similar to that of architect and historian Andre Corboz, who defines region as a palimpsest marked both by irreversibility and by its own unique character (i.e. a trajectory) – places a great deal of importance on the long term.

"A region, burdened as it is with the all the remnants and interpretations of its past that continue to survive today, is like a palimpsest. Setting up new facilities or using certain land in a more rational way often requires changing its substance in an irreversible manner. But the region itself is neither an immutable envelope nor a product to be consumed and changed. Each is unique and hence the need to "recycle," chisel away at…the old words men have inscribed on that one-of-a-kind material that is the soil in order to inscribe new ones there – ones that respond to the needs of today, before they too are repealed." (Corboz, 2001, p.228) [Our translation]

Accounting for time in our analyses in fact means the analysis never starts from a starting point; there is always a back story, with the many legacies, artifacts and imprints it has left on the environment.

The artifacts of every shape and size that make up socio-spatial morphology can be seen as the sedimentation of past public policies that have had a spatial impact and as the materialization of individuals' and entities' decisions on a given environment.

The spatial differences that we see in different agglomerations are the result of this sedimentation and inevitably become contextualizing and structuring elements that provide a framework for actors' motility. For example the social differentiations within a city – that is to say both the power and geography of social segregation – naturally orient the field of possibles in terms of public action (Orfeuil 2004). A context of poor populations crowded into city suburbs naturally leads us to ask questions regarding accessibility to the city center in a different way than if this same population were actually located in the center. Here is another example: the human density that results from the sedimentation of policies and individual/collective action largely determines the extent to which mobility flows increase and in this way defines a field of possibles with regard to transportation policy. Low population density does not, for the obvious reason of profitability, allow for the development of exclusive lane public transportation systems in a real way (Bavoux et al., 2005).

6.3 Long temporalities, inertia and change

Insomuch as the long term is central to the sedimentation of the artifacts produced in a given environment so do questions arise regarding their renewal, change and the reversibility.

The issues of time, the weight of 'History' and the inertia of past public action are well-represented via three fields of research.

To begin with, the notion of urban regimes, which has become widespread outside of the U.S. since the beginning of the 90s (Stone, 1989), attempts to offer a temporal representation of local policies in which priority is given to social actors and policies in the defining of these temporal arrangements, their critical capacity and their spillover. In their state of the art on the notion of urban regime and the unfortunate tendency to enlarge this concept, Mossberger and Stoker (2001) for instance highlight the extent to which urban regimes constitute of a coalition of actors involved in long-term collaborations rather than a partnership of mere circumstance. In this first approach the material production of a city or region results from the stability of its socio-political coalitions.

Next, in keeping with the institutionalist works of Pierson (2000) and Mahoney (2000), urban planners have focused on highlighting the inertia so intrinsic to local systems resulting from the rigidity of institutional arrangements, the growing yield of previous choices and the high cost of changing directions. Woodlief (1998) for instance tackles these types of reproduction by showing the two, very different paths Chicago and New York took after the Great Depression in the 30s by examining their choice of local institutional arrangements.

Finally, a series of studies on STS (science, technology and societies) and the city that attempts to better appreciate the role of infrastructures and technological choices (Tarr and Dupuy, 1988; Graham and Marvin, 2001) in the creation of regions, attributes a great deal of importance to the role of successive technological development phases and of benchmarks (Lorrain, 2004) in the writing of local history. Anique Hommels (2005) notably has put forward a typology of social and technological modes of entrenchment of infrastructures and urban forms.

Undoubtedly these research trends do not exhaust the question of the long-term impact on the production of the city. More specifically, urban research speaks little of the shifts that result from the adoption of the speed potentials of transportation and telecommunication infrastructures by individual and collective actors.

6.4 Speed potentials, motility and urban dynamics

While the material dimension of an environment is always central in terms of defining its substance, the fact that it is also key in terms of defining its dynamics is a more recent observation that is a consequence of the improvement of transportation and telecommunications systems which, linked with free exchange, allow individuals to move in ways and have mobilities that were impossible before.

In chapter 5 we emphasized that the speed potential of transportation and telecommunications technology was a decisive contextual ingredient when it

comes to actors' motility strategies. It is impossible to imagine a spatial division of work for instance without an effective transportation system. Similarly the growth of the financial sector and the mobility of capital at the global level are made possible by new information and telecommunications technologies. The changes that have taken place in the global economic system since the 80s go hand in hand with the arrival of new kinds of speed potentials whose appropriation has allowed for increased productivity.

Let us now go back to the question of speed potentials and technological innovation in the fields of transportation and telecommunications by looking more closely at their ambivalence. The technological advances that gave birth to this increase in speed go back to our valorization of it (speed). Today this valorization is running up against the environmental consequences of rapid transportation and how it is being used by the economy (outsourcing, increasing competitiveness, etc.).

Historically speaking, increases in speed have always taken place in leaps and bounds – the most spectacular of these having occurred in the past two centuries. Once upon a time only the blow gun, the arrow, the horse and camel (and associated paraphernalia), the carrier pigeon and finally the cannonball and shotgun bullet surpassed human foot speed. By changing energy output and speeding up the processes of mechanization and motorization the Industrial Revolution occasioned a formidable game of positive cause and effect in the field of mobility, with numerous human and material factors acting as a kind of cross–fertilizer. In one manner or the other the emergence of the major technical systems linked to mobility, which the economic evolutionist trend associates with the Kondratieff cycles (Freeman et Perez, 1988),[13] have characterized the growth stages of industrial society until the present day.

Steam power and, later, electricity hence made the railroad and, even later, hydrocarbon-powered vehicles like the car, truck or planes possible. These modes then were added to the supply of mobility infrastructures that, most recently, has been boosted by information and telecommunications technologies (ICT). The increase in speed (pure, intermodal or door-to-door) is one of the main resultants of these socio-technological efforts, both molded by and molding the way we live and the environment we live in.

[13] It is worth noting that while steam power and the railroad marked the first two stages as the organizing principles of their technological innovation and economic growth that chemistry and the harnessing of electricity played a seminal role in the next stage (towards the end of the 19th century). Finally, the most recent cycle has been linked to information technologies and generic service technologies. All or almost all long cycles thus have a strong relationship with the technologies that support mobility or are associated with the building of regional forms or even specific social geographies.

Until now, speed associated with ever-increasing efficiency, has been the symbol of productivity and technological progress *par excellence*; but like all symbols, it obscures several basic truths. Most notably it is typically expressed in the form of individual performances (we go faster by taking x, y or z or thanks to the logistical or organizational efficiency of certain systems). In fact it is a collective phenomenon and is produced collectively. Whatever the case it allows us not only to travel faster but to perform a great many other material- or service-oriented operations as well. Speed is now a parameter that lies at the very heart of our cultural representations; even those who do not necessarily have the means to affect it are nonetheless largely dependent on it.

Until the revelation of the first alarming reports on the harmful effects of growth and development in the 1970s, the technological enthusiasm of the 50s and 60s was counterbalanced by a great many critiques. While transport speed has been at the center of controversy since industrialization, it was apparently not enough to halt the development of large networks – even at the local level. Over the last forty years or so cracks in our faith in the infallibility of technology have begun to appear, generating numerous problems both locally and globally. Indeed the effects of traffic congestion, danger, pollution and the rarefaction of natural resources have all progressed in tandem.

6.5 Empirical investigations

We will use three studies as the foundation for our investigation of the effects of artifacts on motility. The data originates from the survey of residential lifestyles in Bern and Lausanne (Pattaroni et al., 2008) discussed in chapter four, a comparative study on the interplay between the rail supply and the motility of the population in six European countries (Germany, Belgium, Spain, France, Great Britain and Switzerland) (Kaufmann et al., 2008) and finally a comparative Franco-Swiss study on inequalities of access to the city (Jemelin et al., 2006).

These three studies will make it possible to explore the effects of speed potentials on the three principle dimensions of motility: having plans and projects, user skills and access.

6.5.1 Artifacts: seducers giving way to projects

A context can give birth to projects. Our survey on residential lifestyles in Bern and Lausanne shows that the multimodal transportation supply and housing markets (i.e. an ensemble of urban artifacts) in these cities influence the way lifestyles are distributed in space as well as their gestation within the population. In other words artifacts can make certain residential lifestyles more attractive and thus give rise to certain projects and plans.

By offering good public transportation across-the-board (or in this case across the region), making a home in the city center, outskirts or peri-urban area of Bern is equally easy for those who value such functional qualities and do not wish to be automobile dependent. Thus hoofers (those who walk), cyclists and public transportation users are more evenly dispersed throughout that region than in Lausanne, where access is very much oriented towards the car outside of the city center. The result is a lack of diversity of lifestyles in peri-urban areas and densely-populated city suburbs – a phenomenon that is further reinforced by a housing market that is both tighter and less diverse than in Bern.

The distribution of the seven types of residential lifestyles identified in our survey within the two agglomerations aptly illustrates this finding (see table 6.1). Distribution in residential areas in the inner city, city suburbs and outlying suburbs appeared to be much more homogeneous in Bern than in Lausanne. The Individualistic type is of particular interest here, as the one group that was equally distributed in all three contexts in Bern was overrepresented in inner-city Lausanne. This observation speaks in favor of a certain 'homogenization' of functional qualities in the Bern region that allows families wishing to opt for public transportation while enjoying proximity to businesses and cultural activities to settle as easily in the city center as in the outskirts.

More than mere automobile dependency, access geared strictly toward the car limits the options in terms of adopting new residential lifestyles.

Table 6.1 Typology of residential lifestyles by agglomeration (Bern; Lausanne).

	Concerned City-Dwellers	Communi-tarians	Bourgeois	Individualist	Unsatisfied	Back-to-nature	Peace-seekers	Total
Lausanne	44.8%	23.1%	26.6%	39.5%	37.0%	15.5%	25.9%	29.7%
Lausanne (suburban)	37.9%	53.8%	59.0%	50.6%	50.6%	50.0%	44.7%	51.4%
Lausanne (periurban)	17.2%	23.1%	14.4%	9.9%	12.3%	34.5%	29.4%	18.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

	Concerned City-Dwellers	Communi-tarians	Bourgeois	Individualist	Unsatisfied	Back-to-nature	Peace-seekers	Total
Bern	49.0%	30.3%	15.1%	28.8%	38.6%	12.3%	40.9%	30.7%
Bern (suburban)	40.4%	53.5%	61.6%	55.0%	45.6%	57.9%	50.0%	52.0%
Bern (peri-urban)	10.6%	16.2%	23.3%	16.2%	15.8%	29.8%	9.1%	17.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

The differences between the two cities run even deeper: regardless of distribution throughout the city some residential lifestyles were more present in Lausanne and others more so in Bern. We can therefore deduce that the context itself incites individuals to adopt certain residential lifestyles more than others. Thus types 1 and 2 were more present in Bern than Lausanne while type 7, on the contrary, was more strongly represented in Lausanne than in Bern. The Bern context incites individuals to adopt concerned city-dweller or communitarian lifestyles as they offer fulfillment without total dependence on a car. Inverse but corollary reasoning can be used for Lausanne.

We must not of course neglect the cultural differences and simply attribute these differences in lifestyle to differences in access and in the built environment. However, this finding shows that an environment's material receptiveness to aspirations has an impact not only on their realization but also on their very formation. In other words the context, by virtue of its footholds, sometimes creates the project when it comes to residential lifestyles.

6.5.2 Artifacts: makers of lifestyles

Context also has an effect on skill. The data from our study for the French railways on the relevancy of introducing regular interval timetables[14] in France (Kaufmann et al., 2009) shows that the way transportation services are organized and they way in which they constitute a system both have a decisive impact on the skills adopted by individuals when they travel.

Regular interval timetables and mobility

The goal of this study was to highlight the effects of regular interval timetables on motility in France. To do this we compared it with countries where such timetables already exists (Germany and Switzerland) and countries where it does not (Spain). The comparison brought to light several notable discrepancies in the different contexts themselves and in skills needed for getting around in them.

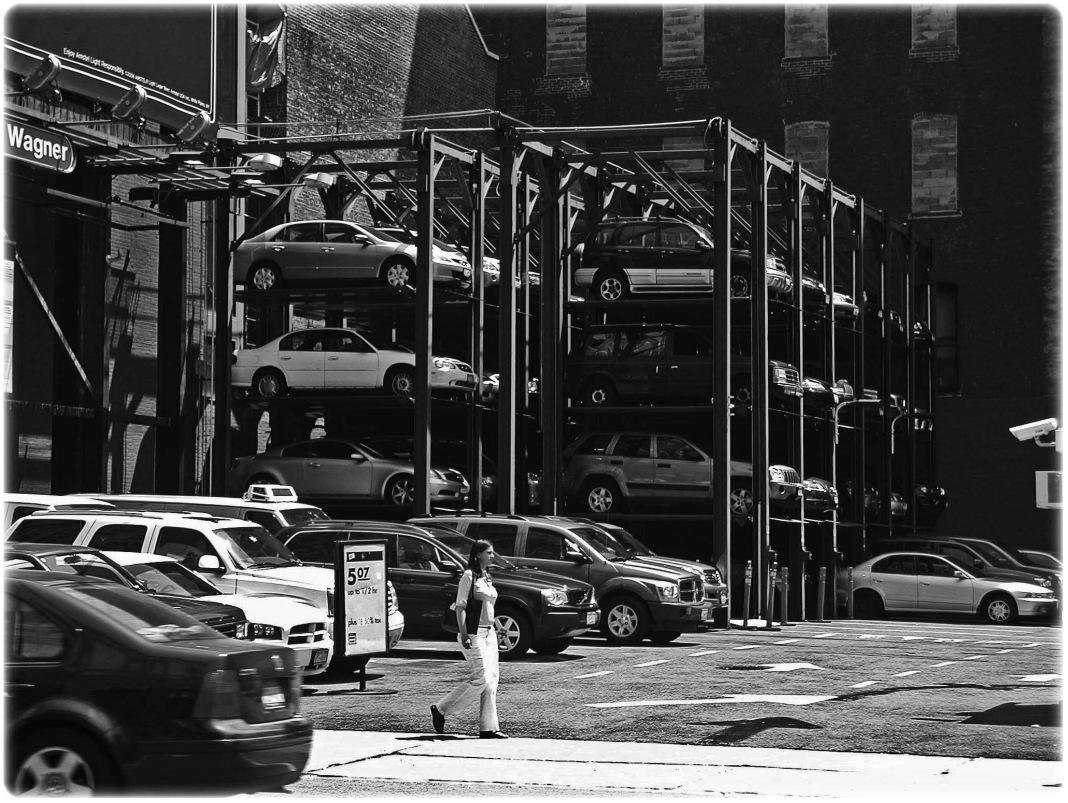
The following findings enabled us to put forward this general observation: change like regular interval timetables does not inherently affect how the supply is used; it also depends on the population's aptitude for movement. Thus a change in the transportation supply will not result in the same behavior in every context; other factors also have an impact on the way people move. Changes

[14] Regular interval timetabling is an operating principle characterized by the systemization of service on a 30-, 60-, 120-minute (etc.) schedule. The advantage for the user is the ease in remembering this type of schedule as well as the quality of service. Time phasing works best when it is implemented by all public transportation operators by allowing for the realization of a comprehensive public transportation service covering the space-time of a region.

in travel behavior depend in particular on the way the change resonates with a given population's motility and hence all the other factors that affect this motility (road access, standard of living, culture, mobility projects, etc.). Consequently, the impact of a change in the supply must be measured based on the population's ability to move. The preeminence of disparate types of motility within a given population therefore varies considerably from country to country. France is largely characterized by 'motility limited by skills', as the supply is non-systematic and does not run by regular intervals and thus demands more honed user skills than countries where the supply is integrated and systematic (especially in terms of days/hours of service).

The comparative analysis of the four countries demonstrated that six variables with regard to the public transportation supply were decisive when it came to creating of modal habits: (in decreasing order of importance) the spatial coverage of the supply, travel time, frequency of service, ease of appropriation, comfort and price. We found that when the quality of one of these variables was high (being able to get anywhere via public transportation, service throughout the entire day, etc.) it then became important motility-wise, especially with regard to skills, thus illustrating how the transportation supply gradually becomes part of lifestyles. Our findings even show that it is a reciprocal relationship: a lifestyle that is dominant in a given context informs the supply insomuch as the population's reactivity to a 'new and improved' supply depends on their motility and aptitude for getting around. Therefore, not only does the nature of the supply itself tend to result in specific travel behaviors but it also changes the very substance of a population's mobility.

The scheduling and comprehensibility of a public transportation supply are a good example of this phenomenon. The Germans who for the most part have a highly efficient door-to-door public transportation supply that is easily adopted and has a comprehensive service schedule, are marked by these characteristics in terms of their lifestyles: they take advantage of their travel time, find it easy to do long commutes, etc. In France – for pretty much these same reasons – the population in general is less reactive to the public transportation supply than in Germany (except in the Ile-de-France region and several other major cities), which can be explained by the fact that the supply lacks in certain key areas such as spatial continuity or comprehensiveness (and comprehensibility) of its service schedule. This makes adopting a lifestyle in which public transportation plays a major role more difficult. A lifestyle organized around public transportation use in France requires more fine-tuned skills than such a lifestyle does in Germany (i.e. a certain degree of ingenuity to compensate for the shortcomings in the systems itself).



New York 2009 - Jérôme Chenal

Mobility changes from country to country

Data from the quantitative European JobMob survey made it possible to do a typology of the motility in all four countries, thereby allowing us to quantify discrepancies in motility according to country (Kaufmann, Vivy, Widmer, 2010). The typology was based on a principal component analysis and followed by a hierarchical cluster analysis (Ward method on the scores of factors). To ensure equivalent weights for the factorial analysis the constituent variables were standardized so that their values ranged from 0 to 1. The number of types was set at six based on a comparison of dendograms.

The resulting six types of motility can be briefly described in the following manner:

Weak motility. The dominant logic is 'default' use of public transportation due to a weak local supply and access to car. Principal characteristics include weak revenue, limited automobile access, underdeveloped user skills and few mobility projects.

Motility limited by access. The dominant logic here is to minimize travel time and cost in order to overcome geographical remoteness and the desire to 'chain' activities. Principal characteristics include residential location with limited automobile/public transportation access, car ownership.

Motility limited by skills. The dominant logic is to view travel and commuting as a daily hassle, the time budget of which must be minimized as much as possible. Principal characteristics include a utilitarian approach to travel that the individual strives to make as easy as possible. Low daily TTBs, mobility skills limited outside routine activities.

Motility limited by the importance of routine. The dominant logic is to avoid confrontation with unknown spaces and situations. Principal characteristics include attachment to the familiar world of the neighborhood and systematic attempts to avoid the unknown leading to relatively intensive automobile use outside the framework of daily life. Life plans are aimed at sedentariness and attachment. These individuals do not like to move around.

Mobility characterized by residential sedentariness. The dominant logic here is to maintain a residentially sedentary lifestyle even if it means a great deal of commuting. Principal characteristics include a residential location that is easily accessible by car or public transportation. Residential attachment is strong for a variety of reasons (attachment to a place, home or social network, a household wherein both partners work, etc.), resulting in a strong propensity for long-distance and weekly commuting. Skills are highly-developed when it comes to making effective use of commute time and scheduling activities with long daily commutes.

Maximum motility. The logic here is to maximize mobility potential in order to always have the widest possible range of travel options. Principal characteristics include a residential location with excellent automobile and public transportation access, valorization of mobility as a means of discovery and enrichment, large TTBs, highly developed mobility skills.

These six types show that certain individuals are more readily endowed with motility than others. More importantly, individuals have many *different types* of motility, thus making it hard to say who has more and who has less.

These six types of motility have contrasting preeminence depending on the country (Table 6.2):

Weak motility was more observable in Spain than the other countries examined, thus attesting to the population's strong local ties.

Motility limited by access was most present in France, a country characterized by centralization, long distances and large parts of the country that are sparsely populated and relatively inaccessible.

Motility limited by skills was considerably more present in France and Spain, which correlates with the observation that in these countries public transportation scheduling (especially train) was often non-systematic and complex and required greater skill in order to be adopted than in other countries where the public transportation supply was scheduled in regular intervals and coordinated with regards to different modes and operators.

Table 6.2 Typology of motility.

Type of motility	Germany	France	Spain	Switzerland
Weak motility	7%	9%	14%	10%
Motility limited by access	11%	15%	12%	9%
Motility limited by skills	20%	36%	40%	23%
Motility limited by routine	19%	13%	7%	24%
Motility marked by residential sedentariness	23%	16%	18%	22%
Maximum motility	20%	11%	9%	12%

Motility limited by dependency on routines was strongest in Germany and Switzerland? Which is consistent with the regular interval timetabling of the public transportation supply in those countries, thus facilitating routine use of public transportation.

Motility marked by residential sedentariness, is most present in Germany and Switzerland, this finding can be explained both by the decentralized institutional organization in these countries and the abundant, regular-interval supply, allowing for a greater user flexibility.

Maximum motility was most present in Germany. In understanding why, we must consider the large size of the country combined with the excellence and multiplicity of networks that serve it.

Considering the differences among the countries, we can imagine in a very general way how the regular interval timetabling of the rail supply would impact motility in France.

Making public transportation more attractive to more types naturally favors its use especially to the motility limited by residential ties, motility limited by routine and maximum motility types, all of which in their own way are highly responsive to the continuity of the supply and ease of adopting it.

As we have already seen, by modifying the preeminence of different types of motility within the population to the benefit of the three aforementioned groups, the population's motility as a whole will be influenced by the quality of the supply's variables. Therefore a highly continuous supply that is easy to use naturally favors the population's adopting skills wherein these factors will play a key role. The same can be said of respondents of the motility limited by skills type, who have been able to scale down with the introduction of regular interval timetabling because the skills needed for organizing oneself and get one's bearings in time and space are more easily acquired (because of their systematic nature and readability of the supply).

6.5.3 Artifacts and access: a complex relationship

The preceding points show how quality of access in general (meaning the spatial and temporal scales of the speed potentials of transportation systems) likewise has an impact on projects and skills in the matter of motility and thus lifestyles. The empirical studies that made these observations possible have until now come from the transportation field.

To tackle the issue of access and forge a link between speed potentials, the city and the region at large, we will turn to a collection of comparative data on the inequalities of access in the cities of Lyon, Grenoble, Rennes and Strasbourg

(France) and Zurich, Bern, Lausanne and Geneva (Switzerland). The purpose of this study was to assess how changes in access to city centers have affected how much they are frequented (early 90s to early 2000s). Based on an analysis of policies of access to the city, their socio-spatial structure and frequentation of the city center, it shows that the same change is likely to have a very different impact on motility depending on the layout of the artifacts in that context.

A comparative investigation of policies of access to city centers in the eight cities highlights four different scenarios (see Table 6.3):

1. Cities with efficient urban and regional public transportation services that optimize these infrastructures and services, all the while adhering to a policy of management of road access to urban centers (Strasbourg, Zurich and Bern);

2. Cities with a good urban public transportation supply but a sub-par regional supply that continue to develop urban public transit system and ring roads without actively restricting automobile access to the city center (Lyon, Grenoble and Geneva);

3. An agglomeration with well-developed regional public transportation and urban public transportation service that has not received a great deal of investment in terms of infrastructure (i.e. exclusive lanes) that pursues a policy of limiting road access to the city center (Lausanne);

4. An agglomeration with little urban or regional public transportation that, during the period in question, adhered to a policy of promoting individual transportation (Rennes).

Table 6.3 Organization of transportation system in the selected cities [during the period of available surveys].

FRANCE	Lyon	Grenoble	Rennes	Strasbourg
PT Supply	Heavy system Subway + bus	Bus + trolley	Bus	Bus + trolley
Mgmt. of road access to city center	Incentive	Incentive	Car friendly	Prohibitive due to regulations
SUISSE	**Zurich**	**Bern**	**Lausanne**	**Geneva**
PT Supply	Heavy system	Heavy system	Bus + trolley	Bus + trolley
Mgmt. of road access to city center	Prohibitive due to costs	Prohibitive due to regulations	Incentive	Car friendly

The impact of a transportation policy on access to the city depends on the geography of inequalities in terms of the residential location of underprivileged populations and families in general. To explore this dimension the social geography of the agglomerations was analyzed. As a result several structural particularities came to lights for each case:

- 'Rich' towns often group together to forms zones, whereas poor ones are more dispersed. This constant, observed for all the agglomerations in question, likewise reinforces the findings in other studies.

- French inner cities are home to more upper-management personnel than Swiss ones. With the exception of Bern, the Swiss capital, which also has the particularity of being home to a large number of upper management from the public sector, Swiss inner cities are not really characterized by socio-professional status. In France on the other hand three of the four inner cities we looked at qualified as "rich" (Grenoble being the exception if we use the guidelines of the 1992 survey on household travel for our analysis). Access to the city center for households with modest incomes is not the same issue in French and Swiss cities, seeing as in the latter's case a greater majority of modest income households already live in urban centers.

- Families, largely underrepresented in city centers, are relegated to the outskirts of agglomerations. This was the case for all the cities we looked at. Our diachronic analyses of Swiss cities attest to this centrifugal tendency of families and, furthermore, highlight an overall decrease in the number of families overtime.

The examples of Lyon and Zurich presented above perfectly illustrate the four points we have just highlighted (Figs. 6.1 and 6.2). The city of Lyon is very much marked by segregation, with most neighborhoods having a higher than average 'white collar' population in the western part of the agglomeration (close to the center) almost touching one another and those with a higher 'blue collar' population concentrated in the eastern part (where public transportation development is still in progress). We also discovered that couples with children were overrepresented in the northern suburbs and underrepresented in the city itself which, however, is home to a large number of white collar employees. Only the southern part of the city appeared relatively mixed.

Zurich was a rather different case except for one point – the concentration of 'rich' neighborhoods close to the center. Segregation was much less marked here. More specifically, towns with high working-class populations were evenly distributed throughout the agglomeration and had many more mixed neighborhoods without over- or underrepresentation (more than half), compared with only a third in Lyon.

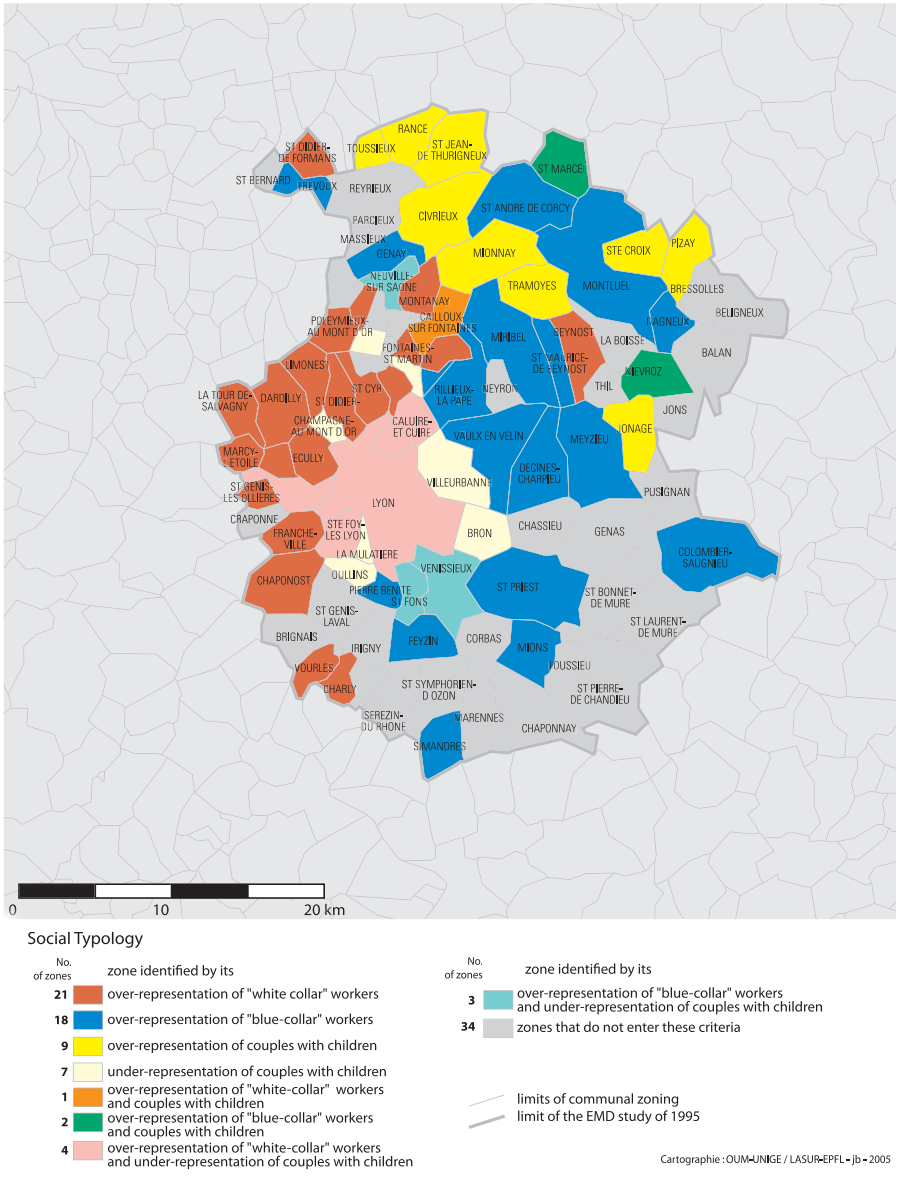


Fig. 6.1 Social typology for the Lyon agglomeration (1999).

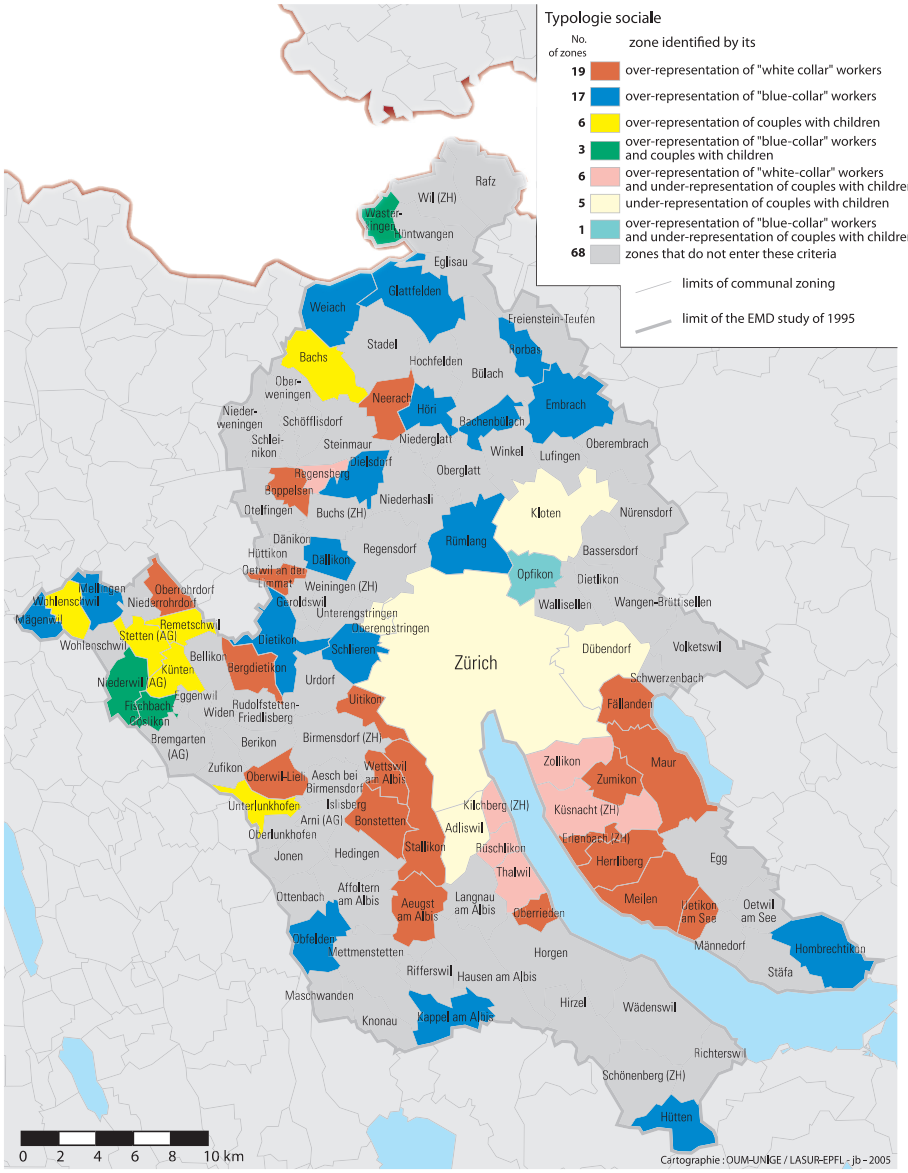


Fig. 6.2 Social typology for the Zurich agglomeration (2000).

To analyze the social inequalities of access we created an indicator to describe the modal practices of those interviewed with regard to their socio-demographic characteristics and, more importantly, socio-professional category. Tables of odds ratios calculated by measuring the difference from the average (set at 100) were then calculated. A figure of less than 100 indicates underrepresentation while a figure over that value indicates overrepresentation.

Almost irrespective of the city in question we observed that the proportion of "higher-ranking" socio-professional categories that used cars was considerable. The most interesting developments were in Bern, Strasbourg and Zurich – cities that had pursued policies of restricting inner city parking for the period in question.

In Bern and Strasbourg parking non-management (i.e. the elimination of parking spaces) did not have the same effect as managing parking via cost (parking spaces in Zurich for instance are expensive). In the first case we saw a homogenization of automobile use between 1994 and 2000 among the different socio-professional categories (blue collar workers used their vehicles nearly as much as white collar workers did). In the second case, however, segregation was reinforced, with white collar workers overrepresented as drivers living in the city center. In Bern for example representation for this population fell from 146 to 126 and in Strasbourg from 140 to 128 while skyrocketing in Zurich from 115 to 168.

Table 6.4 Odds ratios for populations that use a car during the day by socio-professional category (France and Switzerland).

France	Lyon		Grenoble		Rennes		Strasbourg	
	1985	1995	1992	2002	1991	2002	1988	1997
Shop owner, craftsperson, business owner	108	116	115	120	90	100	98	105
Freelance professions, manager	133	132	129	133	131	126	140	128
Intermediary professions	142	130	133	135	128	121	136	133
Employees	102	100	104	115	105	98	104	105
Laborers	98	100	96	104	116	103	96	107
Unemployed, retired	63	68	58	64	74	71	*	68
Students	71	82	76	85	78	81	64	70
	100	100	100	100	100	100	100	100

Table 6.4 (continued).

Switzerland	Zurich		Bern		Lausanne		Geneva	
	1994	2000	1994	2000	1994	2000	1994	2000
Freelance	139	141	142	126	123	162	120	133
Upper managers	118	148	146	126	169	135	114	133
Middle managers	132	124	138	122	120	132	140	125
Employees	125	114	121	122	111	116	126	117
Students	68	58	58	63	89	59	77	72
Unemployed, retired	68	72	67	78	71	68	63	81
	100	100	100	100	100	100	100	100

It also becomes clear from our analyse that, in the four agglomerations where the regional rail supply is substantial (Strasbourg, Zurich, Bern and Lausanne), not having access to an automobile outside of the city was much less of a handicap. It is of course in light of these different situations that the segregative effects of policies that limit automobile access to city centers should be read. Limiting parking options, when other access means are available, is radically different from limiting parking in a city that does not have decent rail service offering access to the center. In the first case the inequalities of access are increased, even more so if the peri-urban ring road is inhabited by socially disadvantaged populations, as in neighborhoods in the east of Lyon for instance.

These findings have brought us to three important conclusions:
The impact of a given measure is *not* universal. Without getting into a debate on the question of transferability we must recognize that given the results, postulating on generic effects of policies aimed at regulating mobility is a misleading shortcut. The social geography of an agglomeration and quality of its public transportation system at both the urban and regional levels have a direct impact on inequalities of access. A policy that restricts parking in the city center will therefore not have the same impact in cities where quality public transportation services serving both the inner city and outlying areas exist and cities where they do not; nor will its effects be the same in cities where white collar workers, blue collar workers and families are evenly distributed throughout the agglomeration or, contrarily, are segregated into specific neighborhoods or areas. By systematically considering these factors public policy could aim more effectively to implement measures that take modal shifts and inequalities into account when commute times or transportation costs are increased.

Limiting access to city centers supposes providing an alternative supply at the regional level if segregative effects are to be avoided. The distinction between agglomerations with good regional networks and those without is relatively clear: limiting access to the center obviously has a greater impact when public transportation is not a viable alternative. Thus in Zurich, where 'poor' neighborhoods are situated in the inner suburbs or inner city and are, generally speaking, well-served by public transportation, the segregative impact of restricting automobile access to the center is less pronounced than in Lyon, where poor neighborhoods are concentrated in the east of the city, often far from the center, and not well-serviced by public transportation. This finding indicates that the segregative effects of urban transportation policies can be measured at the urban scale and not merely a city-wide one.

The way of restricting parking also has segregative effects; regulation by price, as practiced in Zurich, where paid parking is both widespread and expensive, augments the segregative effects of the restriction. On the other hand, parking policies that limit free or discounted parking time wise (i.e. blue zones), as in Bern or Strasbourg, counter the segregative effects of restricting automobile access.

6.6 Conclusion

In this chapter we looked at the impact of the material dimension of city or region on its receptiveness to projects and plans. To this end we chose to focus on one specific area: the speed potentials of transportation systems. Without fully exhausting the subject our examination led to several important conclusions.

The first and undoubtedly most important is that material artifacts are not only central when it comes to defining an environment's receptiveness to projects but also, and more importantly, in defining the projects themselves. Thus a highly-performant public transportation supply naturally makes using this system more attractive, thereby inviting and inciting individuals to structure their lifestyles around it. But beware – our empirical findings also show that artifacts take on meaning in relation to one another and that their seductive or segregative effects are largely a reflection of their layout. Artifacts make up more or less congruent worlds that send out signals – sometimes converging, sometimes dissonant. The ensemble of these signals is what defines an environment's material receptiveness to projects, plans, goals and lifestyles.

The second important point to take away from this analysis is that a region's material dimension forges unique motilities with regard to skills. Living in and using a region that has been planned and configured for public transportation use leads people to develop highly-specialized user skills for utilizing the supply for projects and plans. This has resulted for instance in the development of the

long-distance commuting associated with the use of train travel time for work. Thus the link between a region's receptiveness and the motility that characterizes an individual or collective actor is established in an iterative manner. In other words there is not an urban supply on the one hand and a demand on the other but motilities that transform the environment by informing it through action and environments that shape motility.

The third and last important finding is that the arrangement or layout of material artifacts in the city or region is a decisive ingredient in urban culture. As each context is, materially speaking, unique and supposes different conditions for its adoption, the skills and projects actors develop are like so many *arts de faire*. The diversity of lifestyles and projects therefore depends not only on opening an environment's potential receptiveness but also on the diversity of the potential receptiveness between cities and regions.

Sète 2011 - Fanny Steib

Chapter 7

The city as a potential host: ten facts regarding the mobility of cities and its governance

7.1 Introduction

In order to explore cities and regions and appreciate what it is that gives them their substance, we have taken movement as our departure point – a position that, though originally intended to take classic, spatially-centered urban sociology and turn it on its head, has led to an analysis of the urban phenomenon based on the aptitude for movement of individual and collective actors and the receptiveness with which these movements are met with in the given enviroment.

At the outset we defined three key concepts – motility, movement and mobility – and then pondered the question of an environment's potential for receptiveness and its determinants. Using these analytical tools we then explored numerous fields with the help of our qualitative and quantiative empirical research data. Navigating back and forth between theorization and empirical research enabled us to avoid three major pitfalls: the postulation of all-encompassing theories on cities and environments in general whose contours are vague at best on a field by field basis; the development of theoretical propositions disassociated from our field observations; and finally, theories on cities and regions that look at what is happening in them as opposed to what defines them.

By making this tension between a theoretical approach and empirical findings the focus of our goals for this study, we have succeeded in staying true to our sociological approach; it is neither merely a question of scholarly discourse on cities and regions and their dynamics nor of simply amassing empirical data in an non-critical way without deeper analysis. What it is is an attempt to contribute to

understanding and defining the urban phenomenon via a dialectic between the measuring of phenomena and their conceptualization.

To put this goal into action I chose to focus on data from the field of transportation systems in the broadest sense of the term – a choice prompted on the one hand by the fact that the changes urban areas have seen over the past several decades are largely linked to the increase in and democratization of the speed potentials of transportation and telecommunications systems and, on the other, a desire to center our empirical investigations on a specific theme. The result is that the book's various overtures are marked by the tropism of actors' movements. This we must fully accept; I feel it is much more stimulating considering that except for a very generalized injunction it is rare for mobility to be the at epicenter of work on cities and regions.

For post-structuralist researchers, mobility, flows and technical and regional networks are too often relegated to the ranks of unfounded, superficial evidence in literature on the city, thus allowing them to produce a kind of "proof" of the collapse of spatial and social structures. And yet a somewhat detailed empirical examination shows that the increase in flows and speed potentials of transportation and telecommunications systems are not unilateral vectors of a lack of social and spatial differentiation. By focusing our empircal analyses on the theme of movement we have undoubtedly not covered all the levers of urban dynamics, but have nonetheless preserved an approach allowing us to stimulate thought on the transformation of cities and regions.

In this final chapter let us begin with a digest of the principal provisions of our investigations in the form of ten theses. We will then inquire as to the governability of cities and regions in light of these theses, and finally the levers of and issues surrounding just urban policy.

7.2 Ten theses on the city and region

Thesis 1. Examining cities or regions with mobility as our departure point and then moving towards the material dimension, rather than the other way around, is truly heuristic (empircally speaking as well). Such an approach does not allow us to draw conclusions about the disappearance of social and spatial differentiations – quite the contrary in fact.

Our investigations show that moving faster and going further does not mean we are necessarily more 'free' in our movement in space and time. Mobility is ambivalent; it is a value and imposes itself as such on actors. Debate on social fluidification is still being gnawed away at by this confusion.

The question of social fluidity, which harks back to the dream of a classless society where equal opportunity is guaranteed for all, is nothing new – sociology has been grappling with it since Sorokin's time. Coupled with the question of the impact of modern transportation and telecommunications systems however, the argument takes another twist. According to classical sociology a fluid society has no barriers, thus allowing individuals to move vertically on socio-professional ladder on a strictly meritocratic basis. This idea has been considerably elaborated upon since the 1960s, most notably with the works of Lipset, Zetterberg and Bendix as well as those of Blau and Duncan. In this often ideologically-oriented bevy of work fluidity has extremely positive connotations as a purveyor of progress with regard to social justice. Compared with this classic sociological argument, the fluidity issue currently under debate in the social sciences concerns vertical movement *as well as* horizontal movement in the social space, thus abandoning the idea of a single, aspirational model of socio-professional success. Consequently, this debate is no longer restricted to socio-professional categories but rather has taken on greater global relevancy with regard to different spheres of activity and their relationship to time and space. In short, the fluidity debate is no longer merely a question of moving from one social category to another; rather, it has to do with all the barriers and constraints an individual faces throughout his life and his room for maneuver within these boundaries. Finally, the fluidity issue can be distilled in the question: Does the compression of time and space increase an individual's room for maneuver over the course of his life?

Modern life in Western societies requires very specific mobility skills, to the extent that they have actually become a prerequisite of social integration. Being flexible, knowing how to adapt and being open to new opportunities are now necessary skills for a successful life both professionally and personally (leisure activities, family, friends, etc.), as is being equipped with the motility that allows us to respond accordingly in these different spheres.

The resource for social integration that is motility is linked both to consumerism in general and the vertical dimension of social stratification, thus echoing the diversification of the middle 'classes' with regard to lifestyles and models of social success (Chauvel, 2006).

Internal differentiations among the middle classes are the focus of numerous studies on the topic of gentrification in urban sociology. These differentiations are also measured by the way the new, globalized urban elite live their lives on a day to day basis and thus anchor their lifestyles in different places in a satisfactory way.

This first thesis clearly demonstrates that above and beyond issues of urban sociology, a closer reading of motility as a resource for social integration feeds issues of general sociology. Far from an autonomous, limited field of analysis, the

study of how actors move and their reasons for doing so contribute to a more general understanding of social relationships and how they are changing.

Thesis 2. Urban dynamics can be appreciated, described and understood based on the meeting of the motilities of individual and collective actors and the environment's receptiveness to these motilities.

Throughout this work we have gradually developed an original approach to considering cities and regions. Beginning with the idea of individual and collective actors' mobility as an attribute of the actors themselves, our approach then led us to the environment itself, which can be more or less receptive to an actor's motility. This receptiveness can be open or, conversely, highly localized depending on the sedimentation of past actions in that environment, be they material artifacts like buildings, roads or railroad networks, legislative or procedural actions, social practices that gradually metamorphize into local culture or real estate prices and supply. This approach wherein motilities and receptiveness mirror one another has the advantage of allowing us to better understand today's urban dynamics, all the while uniting actors, social structures, institutions with context in all its morphological and cultural dimensions.

The idea of varying degrees of environments' receptiveness to motility and thus to the actors' mobility projects is in itself nothing new; we have seen it already in the attempt to fit lifestyles, hubs and morphologies into the Russian-doll-type logic. What is new however is the multiplication of potential relationships to space – from contiguity to connectivity and reversibility to irreversibility.

Thesis 3. The richness and diversity of an environment's substance is a reflection of the sedimentation of past actions – individual and collective – on and in it and determines how receptive it is to actors' projects.

In several instances our investigations demonstrate the importance of the long term when it comes to a region's substance. In addition to wealth and diversity that is contrasting or spatially variable depending on the context, they have allowed us to identify three types of historical sedimentation of individual and collective action in an environment: reproduction, wherein the cognitive, institutional and local morphological arrangements are closely correlated with the generic evolution dynamics of urbanized spaces; innovation, wherein an environment commits to defintively breaking with past trajectories by creating new urban artifacts or transforming their cognitive or institutional arrangements; and dependency, which, based on events of contingent origin, determines a specific causal chain that prolongs its effects in the long term.

An environment that is open, receptive and diverse must therefore be considered the result of long-term sedimentation. Thus the transformation of its recep-

tiveness is a long-term goal that supposes the engaging of a process and coordination strategies in the medium and long term.

Our comparative historical analysis allowed us to identify the institutional, material and cognitive factors that contribute to the lasting inscription of certain regional policies that makes implementing new ones difficult – or even impossible. This approach also enables greater understanding of the investments in terms of money, time, political alliances and material devices needed to reorient public policies and change a region and the practices that take place within it.

More specifically, these analyses prove that what often appears to be flaws in governance in fact serves as a guarantor of diversity and receptiveness to projects. A dilapidated downtown area, industrial wastelands, an urban area marked by institutional division, unused urban rail infrastructures, freeways, abandoned buildings – all of these conditions (and many others) are in essence springboards that an environment offers from which actors can launch new, innovative projects that move away from the dominant trends.

Thesis 4. The speed potentials of transportation and telecommunications systems are important ingredients when it comes to a region's receptiveness.

Insomuch as they make movement possible where once it was not (or was more difficult), the speed potentials of transportation and telecommunications systems are central in terms of defining an environment's receptivess. These potentials are defined both in contextual terms (the existence or non-existence of a network and its development) and relative to the conditions of access (availability with regard to space, time or price).

Access to good transportation services makes it possible for an actor to realize a project that might have been impossible in another context. This is particularly true as regards residential choice and individual property ownership, as speed potentials allows for access to geographically-remote areas where real estate prices are slightly less imposing. In the same way a regional broadband connection coupled with easy access to an airport can allow an individual to work remotely 1000 km from home by working with only one commute a week.

The increase in speeds potentials is, in concrete terms, a major vector for change in a region. We must move away from the idea of the local being embedded in the global and instead turn towards the notion of enmeshment, which posits that the local is no longer subsumed within the global but that these two scales in fact co-exist (Latour, 2005) if we are to truly understand the reality of things. The local or global nature of an object, place or person is determined by how it is linked to other entities.

The challenge for urban planning and development lay in its ability to harmoniously order the multitude of entity networks and bridge the gaps in their temporal and spatial scales. And yet, it is essential to promote a number

of common goods (security, efficient sanitation system, political participation, commercial competition, etc.) at the local level, thereby giving residents the opportunity to settle and build a satisfactory life in a city. The city's pluralism is at stake here – not only as a place of efficiency, trade, safety and justice but also conviviality, friendship, comfort and identity.

Thesis 5. The arrangement of material artifacts in an environment makes for a more or less coherent context. The cohesiveness (or lack thereof) of an environment's material dimension acts as a signal to actors and, in so doing, defines their aspirations and projects.

Throughout this work we have observed that the impact of material artifacts on an environment's receptiveness greatly depends upon their arrangement in space. In fact, as an ensemble, material artifacts create contexts that are more or less coherent and thus more or less likely to incite individuals to adopt certain projects. For instance, in order for an eco-neighborhood-type apartment complex to be attractive it must be located in an urban environment that is rich in amenities, has a quality public transportation service and where travel by bicycle to nearby neighborhoods is both comfortable and feasible. In contrast, putting a trolley in a neighborhood whose urbanistic metrics were designed for cars is contextually incoherent if densification and pedestrian zones were not planned accordingly – otherwise the access offered by the trolley would be limited at best, as walking distances would be too long and the routing, ergonomically speaking, less than perfect. Ultimately, trolley use would not prove particularly attractive.

Moreover, as aspirations with regard to lifestyles are so diverse, our results show that most architectural or development decisions can only satisfy a percentage of the population. Nowadays, in order for a region to be attractive it must offer contexts with multiple coherencies so that actors with different projects can feel welcome there. The example of the residential aspirations of families is emblematic of this. The works discussed in this book show that certain environments combine a number of qualities, thereby allowing very different types of families to live together in the same geographical space (like the suburbs of Bern). This contingency never lies in a single factor (social policy of housing, public transportation development, architectural innovation) however; rather it has to do with the multiplication of these factors. Thus policies that are too homogenous, or that for instance align those qualities favorable to the development of a certain lifestyle (like those that preside over the development of sustainable neighborhoods), always risk having exclusive effects in the long term, thereby causing an increase in the spatial segregation of lifestyles and population categories.

Thesis 6. Public policies in general offer little room for manuever in terms of having an impact on an environment's receptiveness to projects.

One of the key learnings from our work is that misadoption, the spontaneous and the informal, both play an important role in urban and regional dynamics. Obviously not everything can be reduced to such; we were however able to observe that public decisions and their concretization in the form of laws, procedures, plans and artifacts very quickly ran up against the often-ingenious logic of actors who adopt the sytems and devices created and established by the public authorities for other uses.

This has much to do with the fact that private collective actors and individuals have motilities that are likely to be both diverse and oriented either towards movement or mobility.

In this context local public authorities cannot have a real impact on urban dynamics unless they are able to understand the motility to which a given policy is addressed and then respond accordingly with measures aimed at making the environment more receptive to projects (or less receptive, if the political goal is to limit their installation).

In this undertaking, local public authorities are handicapped by motility that can for the most part only be oriented toward mobility, unlike individual and collective actors who are more apt to move. This handicap results in particular in the liberalization of international exchanges, the consequence of which has been to considerably increase actors' propensity to move.

Thesis 7. We can define a city and its surroundings based on the co-existence of different types of motilities of individual and collective actors in a given region, which is also the proof of an environment's increasing receptiveness.

Throughout this book our understanding of what exactly a modern, Western city is has gradually become more refined based on the consensual formula of "city = density + diversity" (Lévy, 1999). The following ingredients were therefore essential in its structuration:

- The city is above all a place of great potential with regard to spatial relationships, from the contiguous and connected to the reversible and irreversible: in the short term (relative to successive spheres of activity); in the middle term (with regard to the opportunity to partake in different spheres of activity); in the long term (relative to the life journey). In short, the city offers a great receptiveness to diverse motilities.

- But these factors regarding a context's receptiveness are not sufficient for defining a city; for this we need actors whose projects utilize this receptiveness. For there to be city, we also need actors whose project is mobility rather than movement.

Thus in order for the city to exist we need not only a population and collective actors whose motility is aimed at mobility – their intent must also encounter a context that enables it.

Paris, salon du livre 2011 - Fanny Steib

Thesis 8. Each city has unique motility, with its own intensity, speed and trends that can be oriented towards change (and thus mobility) or, on the contrary, characterized by a propensity towards movement. A city's motility defines its urbanness.

We have defined the city as the meeting of context – ripe with receptiveness – and the mobility-oriented motilities of actors. From this meeting emerge cities that are more or less 'city' that can be differentiated in terms of their urbanness.

In this same vein our analyses show that it is possible to characterize a city in terms of mobility, meaning its capacity for change or movement (i.e., its ability to 'move' in space). In this perspective a city's mobility has to do with the ability of its actors – individual or collective, public or private – to mould and exploit the environment and its receptiveness.

Our analyses also show that the extent to which a city is receptive is closely linked to its mobility. The more mobile a city, the more open it is to actors' projects. When a city on the other hand has trouble changing, it becomes increasingly less apt to being receptive and thus, in some ways, less of a city.

Thesis 9. A city's mobility determines its attractiveness.
The most mobile cities are also the most attractive to individual and collective actors. For the latter, a city's capacity for change – the very guarantee of its dynamism – is the substrate of innovative milieues and, in this way, quite attractive.

Generally speaking however, a city that is mobile because of its ability to change tends to offer a good quality of life, which further strengthens its attractiveness. Quality of life depends on factors other than income. Like Chambers we could for instance cite "health, security, self-respect, justice, access to goods and services, family and social life, ceremonies and celebrations, creativity, the pleasure of a place, season and time of the day, fun, spiritual experience and love" (Chambers, 1995: 196). We quickly gather that this is not a list of consumable goods but rather a set of lived and shared experiences that determines the quality of our lives. And yet a mobile city offers more opportunities in terms of multiple coherencies, meaning the possible arrangement of different assests is multiple and thus allows for multiple experiences.

Thesis 10. A city's policy is naturally one of mobility.
When we consider the findings of our work we can observe that policies aimed at strengthening the harmonious development of cities – in other words policies of the city – have largely to do with mobility.

Of course it is not about reducing entire policies to a simple question of rapid transportation services and infrastructures; a policy aimed at mobility targets transformation and change in a city. At the same time rapid transportation services and infrastructures have been instrumental in increasing the reversibility of

movement and, in this way, in inciting actors to adopt strategies of motility based on movement rather than mobility. Valorizing mobility and increasing diversity in a given region takes time.

In the long term information and communication technologies present an interesting paradox: on the one hand they represent immediacy; at the same time they allow us to anchor ourselves in space and avoid moving altogether. Though initially we might have believed that they contributed unequivocally and unilaterally to the broadening of actors' movement-based motility, our findings show that the effects of information and communication technologies on cities and regions are much more ambivalent and can also serve to reinforce mobility.

7.3 Argument for regulating motility

In this work we have looked at the profound transformations that urban areas are undergoing based on the movements and mobilities found within them. The political dimension is undoubtedly the first to be affected by the evolution of power struggles and action schemes in these new city-making processes. The sharing of power between public and private institutions calls into question the classic decision-making process whereby state authorities alone make decisions in a linear manner (i.e. by identifying a problem, diagnosing it based on evaluation and deciding how to implement the potential solution). The classic, linear decision-making process has been replaced by an iterative process of multiple back-and-forths between individual and collective and public and private actors.

This conjuncture of weakening public authorities' power in managing choices and controlling decision-making processes is largely rooted in the differential motility of actors when it comes to movement.

Since its inception industrial society has always valued social mobility, which allows for the development of collective dynamics to be founded on the individual's desire to improve his own socio-economic situation. Individuals invest in production in the hopes of improving their lives and social status on a meritocratic basis. Paradoxically, it is also a question of maintaining an egalitarian discourse with regard to competition for social positions that are inherently unequal. This paradox is typically resolved once the ground rules aimed at guaranteeing baseline equality for all actors have been established. Critical sociology has often highlighted the inadequacy of such processes.

Our modern-day valorization of mobility is only partially in line with this framework. Spatial mobility today embodies the notion of freedom. With it, actors are free to create whatever contacts they choose without restrictions of time or space. In terms of social mobility this argument also implies that those most likely to occupy the more envied social positions are also those who are ready to

accept and comply with a logic of movement without restriction. Thus the particularity of today's ideology of mobility is to confuse social mobility with moving through space.

As a result of this ideology the legal arsenals of most states were revised to allow for free trade, resulting in a marked increase in relocation of production plants, capital and workforces not to mention the asymmetry between the motility of public institutions and other actors. The ability to move (i.e. change places physically) has been facilitated for individuals, companies and capital but not for public institutions, which are inherently regionalized.

This observation can be taken one step further: moving is becoming a matter of survival for companies and jobseekers, as well as a key profit vector in the area of finance. Therefore it is as much a question of imposing unwanted spatial mobilities as freedom from spatial ties that allows for the realization of desired projects. Increases in travel and commuting are as much a factor of inequality as of equality, as the skills needed to move are an unevenly- and unequally-distributed resource.

Reestablishing the state's authority with regard to the transformation of cities and regions in this context means regulating the motility of different actors. In order to do so it is essential to understand beforehand the logics of action that underlie actors' movements and mobilities. Actors have and use their highly-specialized skills and creative capacities when it comes to taking possession of technical systems and using them for personal or collective projects. The major challenge when it comes to regulating motility (ahead of policies) therefore consists in having tools capable of describing and analyzing motility and its social and spatial implications in order to obtain the means for controlling it – and all this without adversely affecting regional, economic, social or environmental consequences.

Insomuch as urbanness directly depends on it, the motility policies that result from this knowledge should recognize the pluralism of movement and mobility projects and strive to develop it. This does not mean we must abandon incentive measures – or even proactive ones – but rather remove bans and restrictions.

Our investigations show in fact that policies aimed at impeding certain types of movement are often both ineffective and unjust – ineffective in that many actors bend the rules anyway, thus provoking undesired effects that can be more problematic than the evil they were originally designed to remedy; unjust because the actors most affected by such policies are those *not* able to bend the rules, sometimes putting them in difficult situations.

The transformation of cities and regions requires new tools capable of understanding how they function so as to be able to act on them; regarding them as mere swatches of color ordered by a development-oriented legal arsenal no longer can take into account today's spatial dynamics. From static to closed, to Russian-

doll-type hierarchical organizations, our conception of urban planning should include reticular and rhizomatic spaces, or run the risk of losing control over actors' behavior.

7.4 Change levers for impacting the city and region

A return to the original logics of action that dictate mobility and movement naturally leads to an exploration of their political and social consequences, thus making it possible to analyze the structure and functioning of modern societies in greater detail. In other words we must consider not only changes in lifestyles (pluralism, individualism, etc.) but also the new technical and social forms that drive them (the development of economic structures, technical innovation, changes in customs) and issues that ensue (new forms of inequality, opportunity, physical tensions, socio-cultural conflicts, etc.).

In this enterprise it is important not to limit ourselves to an analysis of the transportation field and telecommunications systems which, whether objects or individuals, are in fact commonly a by-product of human activity. Our investigations have clearly demonstrated that actors' motility is largely based on fields only indirectly linked to transportation or telecommunications. Regulating motility therefore supposes having an impact on areas such as cultural dynamism, early childhood policies and procedures, the social diversity of neighborhoods and many more.

Indeed, regional development is no longer a simple affair of engineering and architecture.

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