Part I

Observing people’s behavior in their own living area
October 4, 1996: the president of Yvelines Departmental Council convenes all the
departmental councillors and organizes a debate on the implementation of the master plan
for Île-de-France (Paris region), approved by the government two years earlier. The mas-
ter plan’s elaboration and implementation represent a considerable amount of work that
involves all those with political and economic responsibility in the region surrounding the
French capital. The stakes are significant as much in protecting natural spaces as in develop-
ing enterprise zones or creating public transportation and highway infrastructures. The
debate of the day—prolonged the following morning by efforts to synthesize a way to
execute the plan contract—has to do with transportation and traffic. I am asked to intro-
duce the discussion topics. As is my custom, I begin my talk by taking stock of the results
of transportation surveys done for Île-de-France for the last 15 years. Faithfully observing
human behavior is a basic principle that I don’t know how to waive.

I indicate that for 15 years the surveys reveal an absolute stability in the number of trips
undertaken each day by each inhabitant of Île-de-France and an equally absolute stability
in the time each inhabitant spends in completing a trip by motor vehicle (29 minutes on
average). I add that the percentage of trips whose length is greater than 1 hour is 9 percent
and that this percentage has not varied in 15 years. I point out that the travel speed for both
public and private trips increases regularly by 0.7 percent per year and that the range of the
trips increases due to the stability of transportation times.

A member of the council, extremely annoyed, interrupts me: “M. Poulit, stop saying
things that are contrary to the truth! Everyone knows that the situation has deteriorated
considerably. Everything you’re saying is wrong.”

The next day, the same councillor takes up his criticism again in even harsher terms.
The regional prefect takes the floor. “Sir, you do not have the right to attack a state
employee because he is reporting facts that rest on in-depth surveys. These surveys represent
16 million francs spent in outlays every seven years by the State and the region. Their results
cannot be put in question.”

One participant in the discussion addresses a kind word to me and asks me to excuse
these inappropriate outbursts, and the president of the departmental council calms down
the remarks.

Analyzing facts is thus a dangerous exercise. As Guy Béart says, “The one who tells the
truth must be executed.”

It is because facts are ignored that affirmations are made that are nothing more than
sophisms to muddy the discussions on managing our living areas. The first of these soph-
isms can be labeled as follows: a new infrastructure set up in an urbanized zone is in strong
demand at the outset and sometimes becomes overwhelmed; therefore, it is useless. The fact
that many users wish to benefit from it is considered an incongruity. It is as if, at the end
of the last world conflict, the lines of people waiting in front of bakeries bore witness to an
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absurdity. Lines are long and impossible to satisfy immediately; therefore, lines are useless! Let's get rid of the problem if we don't know how to resolve it. Fortunately, bakers produced more and more bread and were able to satisfy the population's demand. Understanding of the transportation phenomenon and the way in which a populated area functions remains so lacking at this point that discussions about urban and rural planning are usually unproductive.

In order to improve the situation, it is necessary to analyze the facts. To be sure, this is a stern exercise and less exciting than announcements of future catastrophes. It is, however, a necessary exercise!

Humans, like all animals, possess an important characteristic: mobility. This ability to move is at the heart of understanding the area that people occupy. For eons, humans have sought to improve this mobility by using mechanical means that amplified their natural abilities. Before the flowering of urban civilization, people primarily used their legs to move from place to place, covering 4 kilometers an hour and reaching potentially a range of 50 km². Taming horses allowed a tripling of speed from one place to another, covering 12 kilometers in an hour and gaining access to a potential range of 450 km². Then, with the advent of mechanical means—trains and cars—humans were able to cover 90 kilometers in an hour and access a potential area of 25,000 km². Today, bullet trains allow humans to achieve average speeds of 160 kilometers an hour and to access an area of 80,000 km² in that time. Finally, airplanes opened a whole new stage of development: movement from one continent to another, average speeds of 300 kilometers an hour from takeoff to landing and access to an area of 280,000 km² in that time. This is an amazing growth curve that bears witness to mankind's ability to embrace areas that are increasingly vast by mobilizing his intellectual resources.

This progression affirms that when one speaks of a living area, it is impossible to disassociate humans from the means of transportation they use to move from one place to another. Living areas include spaces people can easily access in a realistic amount of time, but that cannot be increased due to the daily 24-hour rhythm that determines the totality of their activities. Moreover, these spaces can fit inside each other depending on the means of transportation used.

The primary mission of urban planners is to organize human living space, that is, to localize different places dedicated to living and activities; to delimit natural and recreational spaces, and to define transportation networks. But to establish good diagnostic procedures and to propose pertinent solutions, they must have a thorough understanding of how a living area functions. And for that understanding, they must not limit themselves to a simple spatial description, which is unfortunately the fate of many superficial approaches to urban planning. They need to carefully study the way in which inhabitants invest their area in their daily interpersonal exchanges: how they get to work, how they do their shopping, how their children get to school, and how they use their leisure time. What would an area look
like without interpersonal exchanges, with homes and buildings designed for activities but unoccupied?

To study areas people occupy, one must look with the greatest care at the trips individuals make each day to attend to their business or leisure activities. Thus the importance that must be given in this first part of our deliberations (even if a little dry) to the observation of facts, especially of those allowing us to characterize movements from one place to another.

Transportation surveys are the only source of objective information on mobility. Some doubt that useful information can be drawn from seemingly random phenomena. Look no further than daily traffic bottlenecks. What can be gained from surveys in such a case?

As a matter of fact, surveys conducted on inhabitants are an endless source of useful information. It is not because of bottlenecks that commuters’ behaviors are not observable. These follow statistical laws that are impressive in their regularity and repetitive nature. But the public at large is unaware of survey results, having only partial information often linked to exceptions that distort an understanding of the facts.

*How do you conduct an exhaustive inventory of trips within a living area?* Within areas that are primarily urban, well-worn techniques are available. From now on, the nature of movement from one place to another will be well understood. For 25 years, specialized surveys have been conducted periodically in the principal agglomerations of France. If you take the example of the Paris region, four global transportation surveys were conducted at the time of periodic population censuses: in 1976, 1983, 1991, and 2001. Specialized questionnaires were addressed to families selected at random from all Parisian households. These questionnaires, filled out with the assistance of survey personnel who visited households, made it possible to ascertain the daily number of trips taken by each family, the reason for each trip, the starting point and destination, the distance covered, the duration, and, consequently, the average speed. So there is, over a 25-year period, a very complete overview of all motorized and pedestrian movements conducted by residents of the Paris region. Similar surveys were carried out in the principal agglomerations of France. The available statistical base made possible very specific analysis of interpersonal exchanges between residential, economic, and recreational areas.

*And in primarily rural areas?* A fair number of rural areas are actually located on the fringes of urban surveys. This is how it happened that the global survey affected the eight departments comprising the Paris region. Among them are four departments of the large crescent forming the Parisian metropolitan area, of which the largest, Seine-et-Marne (6,000 km²), equals a provincial department in size. Strictly speaking, 80 percent of the living area within these four departments is in a purely rural area.

The tradition of the Ministry of Public Works Services demands nonetheless a different type of survey for rural areas. These are not done at the homes of rural residents, but rather during trips, mostly on roads, by stopping vehicles and conducting brief interviews. These methods are going to change in the near future, since road checks that involve stopping
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vehicles and deploying state and local police forces will no longer be feasible due to lack of labor. The solution will involve adopting a home-based survey. The same methodology employed in primarily urban areas will be implemented once more, and a unifying of census procedures will take place.

In addition, transportation surveys will be complemented by socioeconomic observations to evaluate correlations between trips and creation of economic or ergonomic value. How many persons can I meet within a given transportation time? Is there a connection with the level of distributed salary or with the wealth produced? What kind of natural spaces can I access in this same amount of time? Can a correlation be established with a sense of well-being? Trips only mean something in relation to desired destinations, that is, places people want to go that are the reason for these trips. We should be interested in trip generators, whether economic or natural. The ultimate goal of those interested in living areas at the economic level is to definitively understand the very foundation of the creation of value stemming from the exchange of knowledge humans establish when they interact. In this way, one goes beyond simple analysis of the trips themselves and the associated living areas to an evaluation of the number of interpersonal contacts made. People are, in the final analysis, the only wealth we have. The transformation may be carried out at the level of developing well-being. It is necessary to appreciate the number of natural spaces with which people can enter into close contact to relax and renew their strength. Only nature provides us well-being and renewal!

Where does one find this statistical information that goes beyond the bounds of traveling from one place to another? For employees and jobs, as well as for salaries and gross domestic product (GDP), it is at the national level—the National Institute for Statistics and Economic Studies (l’Institut National de la Statistique et des Études Économiques or INSEE). At the European level it is the Statistical Office of the European Communities (Eurostat). For natural spaces, the most reliable source at the level of each French and European city government is the geographic information database known as Corine Land Cover, established from space images covering all of Europe.

From all these sources of information follow simple results that run counter to commonly accepted ideas. I will present them and show to what degree they challenge us.