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Spatial analysis of long-distance mobility

Richard GRIMAL

French Technical Department for Studies on
Transports, Roads and Highways

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The French National Transport Survey



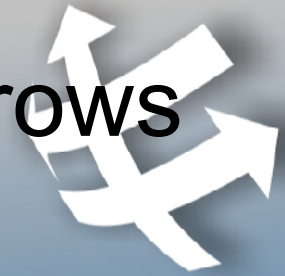
- This article presents some results about « long-distance mobility » coming from the French National Transport Survey, called « ENTD », realized through 2007/2008.
- The ENTD : a nationwide, periodic survey, providing wide information about mobility practices, car equipment, driving licenses of people living in France.
- 20 000 households and 50 000 individuals representative of the population living in France.
- Long-distance is defined as including trips where destination is more than 80 km « bird-eye » from origin, or at least one night is spent outside home, or destination is abroad.

The topic of our presentation

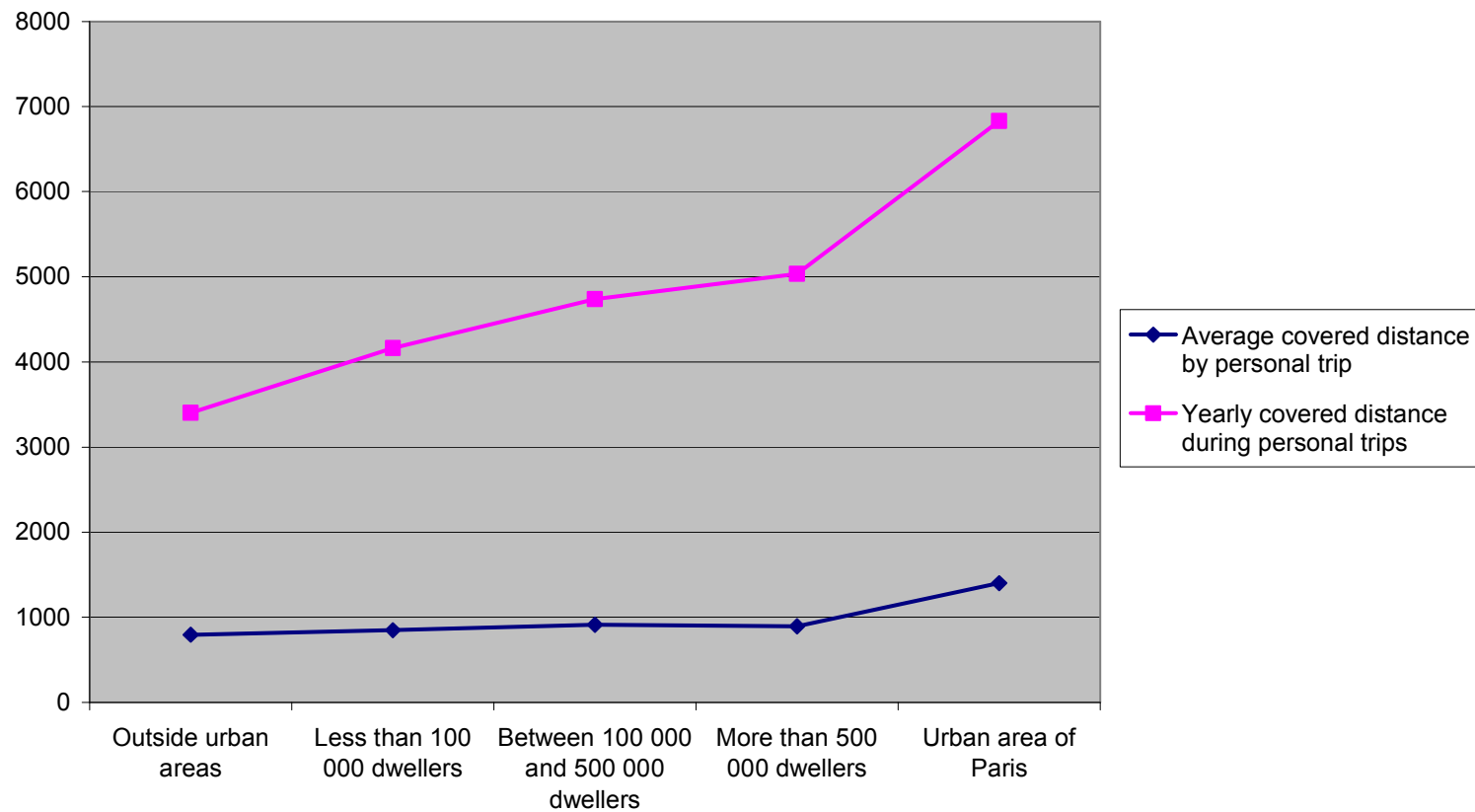


- Our presentation is focused on giving insights into differences in long-distance mobility practices (intensity and modal distribution of trips) with respect to the housing place, depending on urban density, through two main criteria :
 - The position within the urban area (central/peripheric/outside urban areas).
 - The size of urban area (from communities outside urban areas to the urban area of Paris).
- The first part is dedicated to spatial analysis in 2008, the second part to observed trends between 1994, year of the previous survey, and 2008.

Long-distance personal mobility grows with urban density



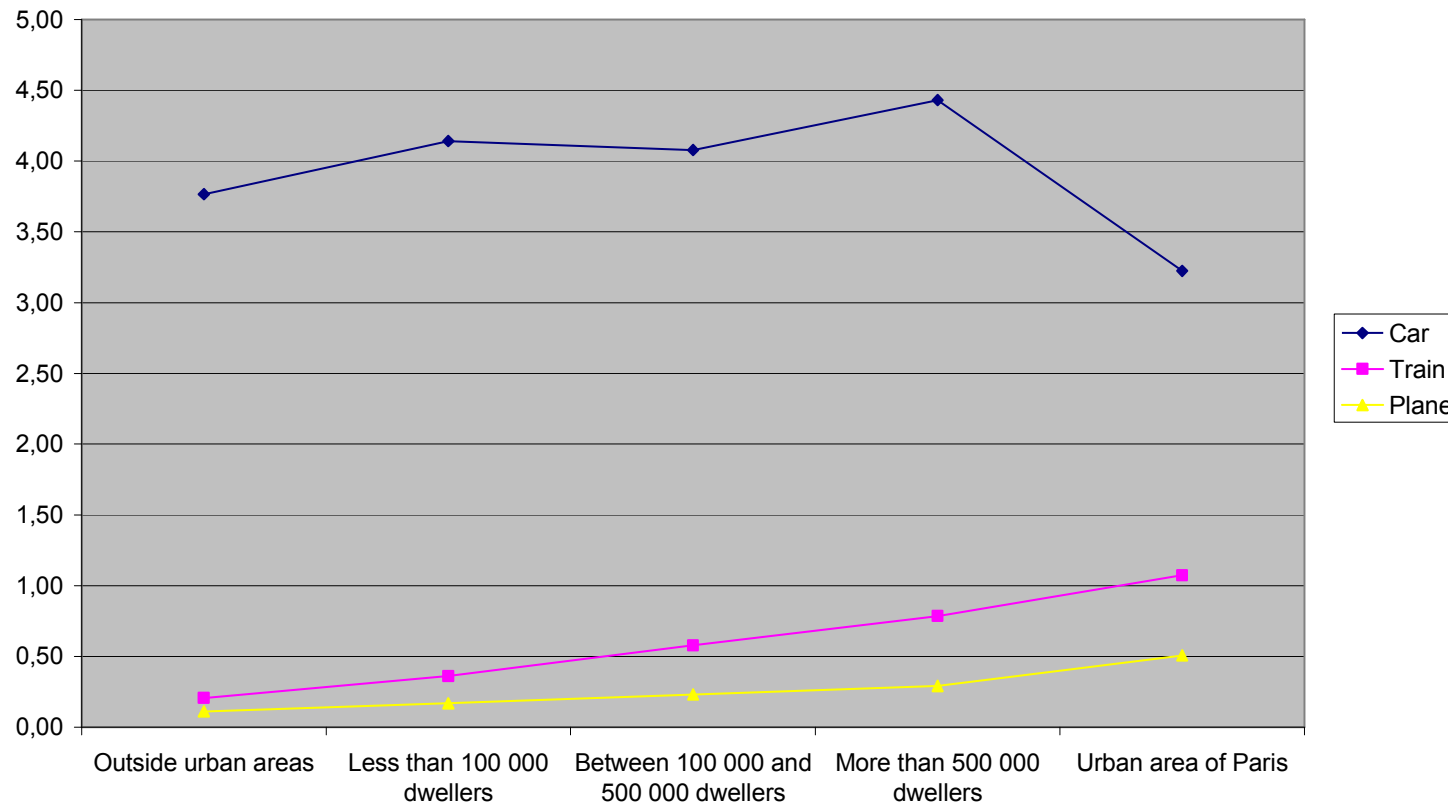
Average covered distance by personal trip and yearly covered distance during personal trips, depending on the size of urban area



However, car trip frequency is weaker in densest urban areas



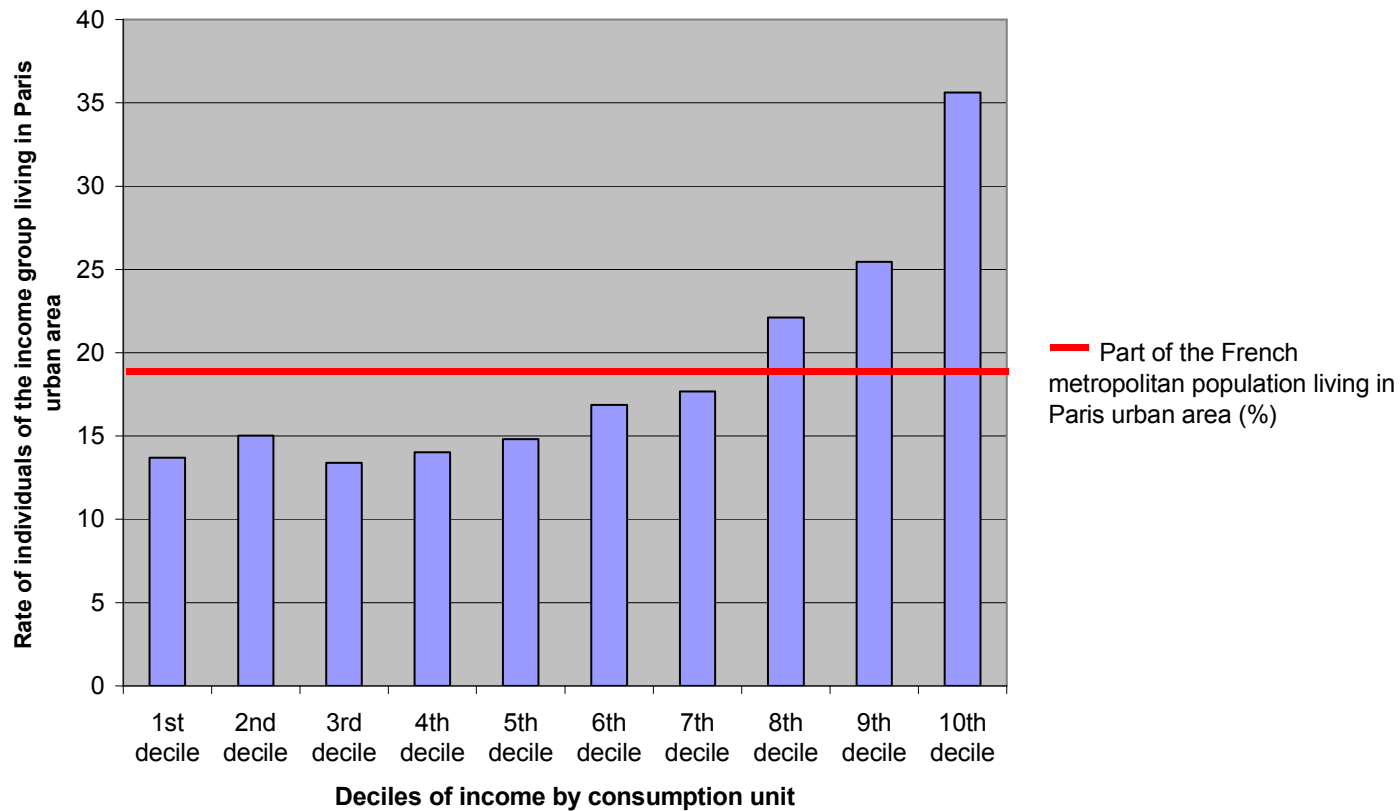
Average yearly personal trip frequency, by mode, depending on the size of urban area, in 2008



Income and car equipment vary inversely with urban density



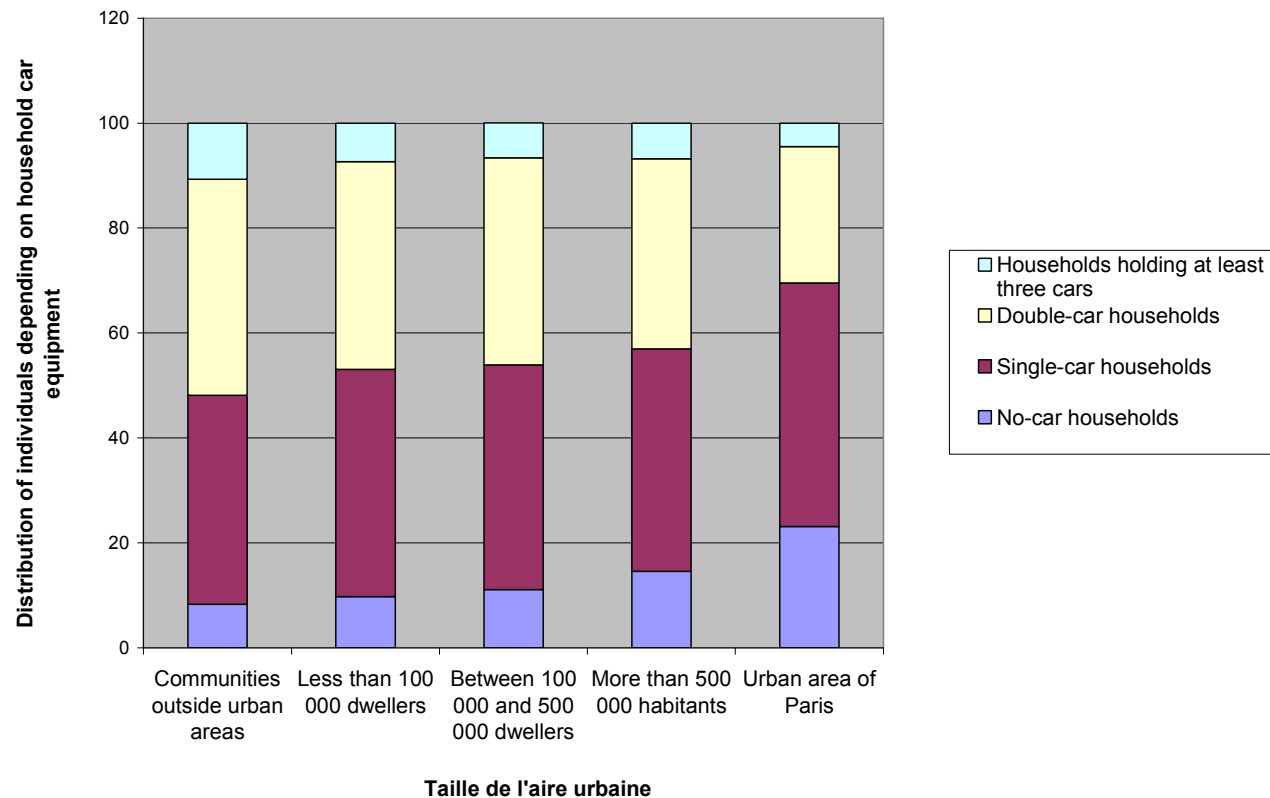
Rate of each income group living in the Paris urban area (%)



Income and car equipment vary inversely with urban density



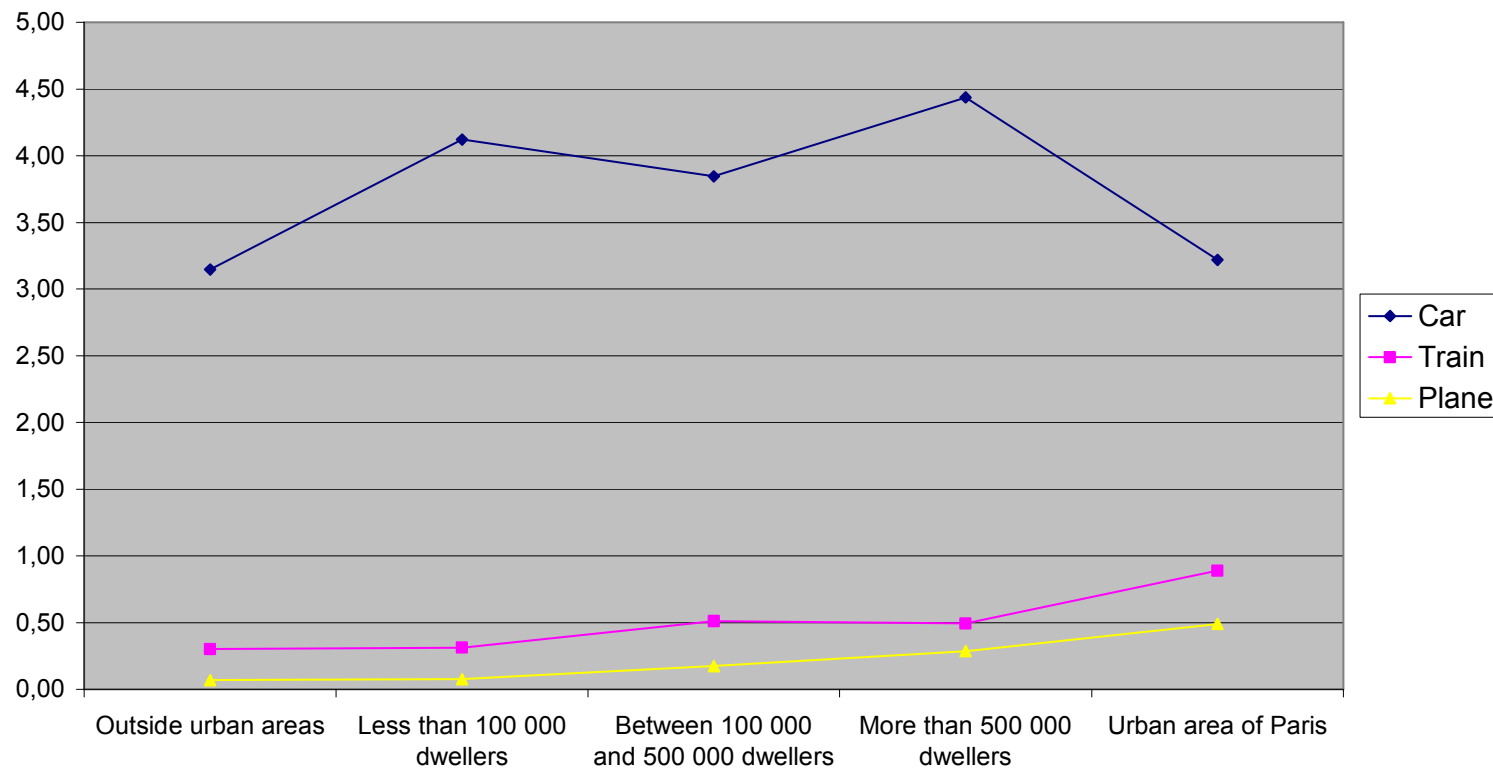
Distribution of individuals depending on the level household car equipment, with respect to the size of urban area, in 2008



A weaker use of car for long-distance mobility in the urban area of Paris



Yearly average personal long-distance trip frequency, by mode, depending on urban size, individuals belonging to single-car households



Mobility needs influence short-distance and regular mobility practices...



- As for short-distance, regular trips, long-distance practices (intensity of car use and modal shares) are influenced by urban density.
- A reasonable explanation is to assume that both decisions of car equipment and intensity of car use are influenced by short-distance or regular mobility needs (house to work, shopping trips, school accompanying), strongly depending on housing position within the urban area in a central-form of urban organisation.
- In the central part of the urban area of Paris especially, the need for car is not as much critical as elsewhere. It may even be very uncomfortable because of congestion, parking difficulties and costs.

...that may indirectly influence long-distance behaviours

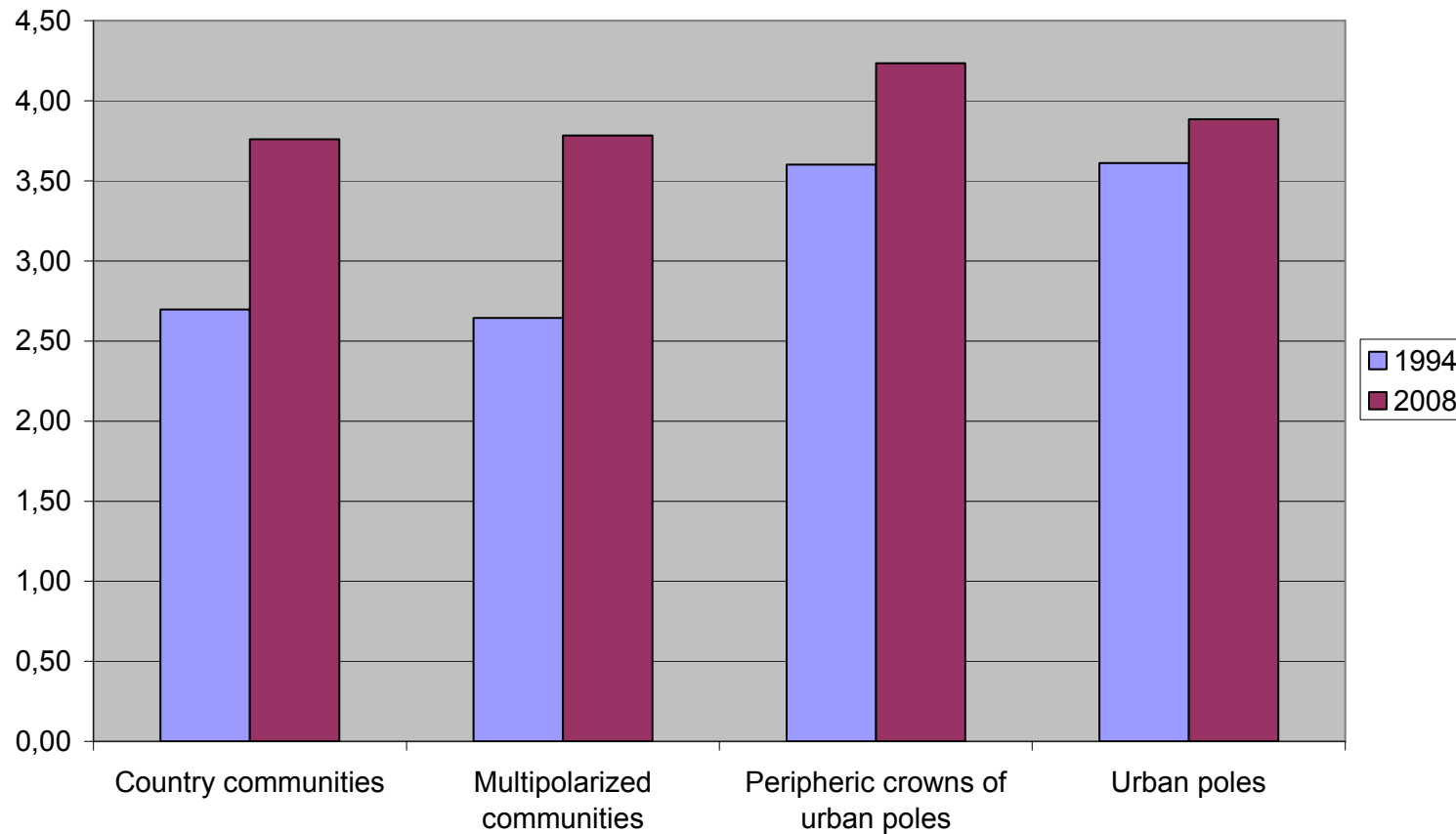


- Giving up car or restraining car use may thus become a sensible strategy in densest urban areas.
- Habits in short-distance mobility would then influence habits in long-distance trips : intensity of car use in long-distance trips is correlated with car use in short-distance mobility.

Changes in personal long-distance mobility, depending on urban density



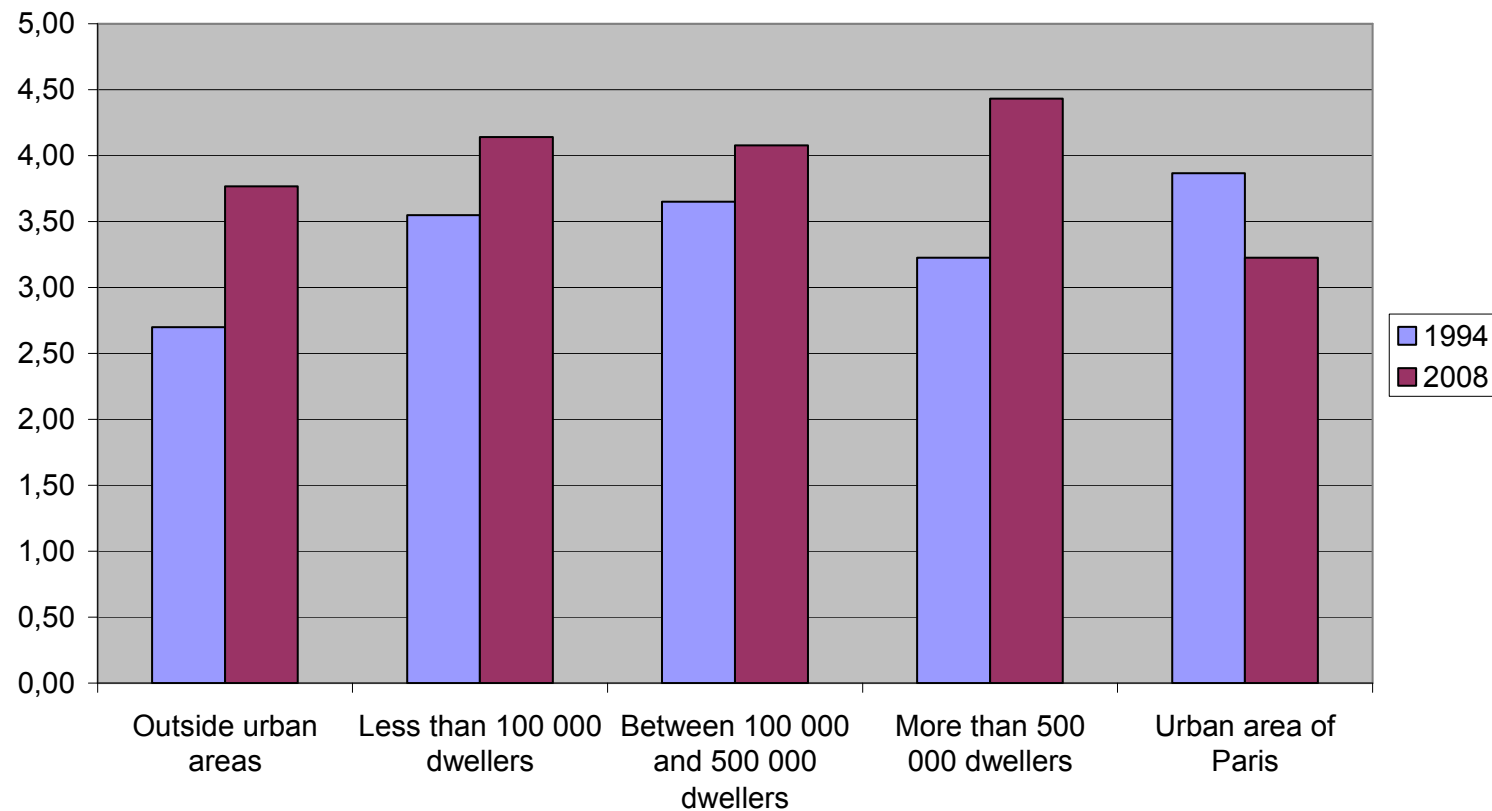
Yearly average car personal long-distance trip frequency, in 1994 and 2008



Changes in personal long-distance mobility, depending on urban density



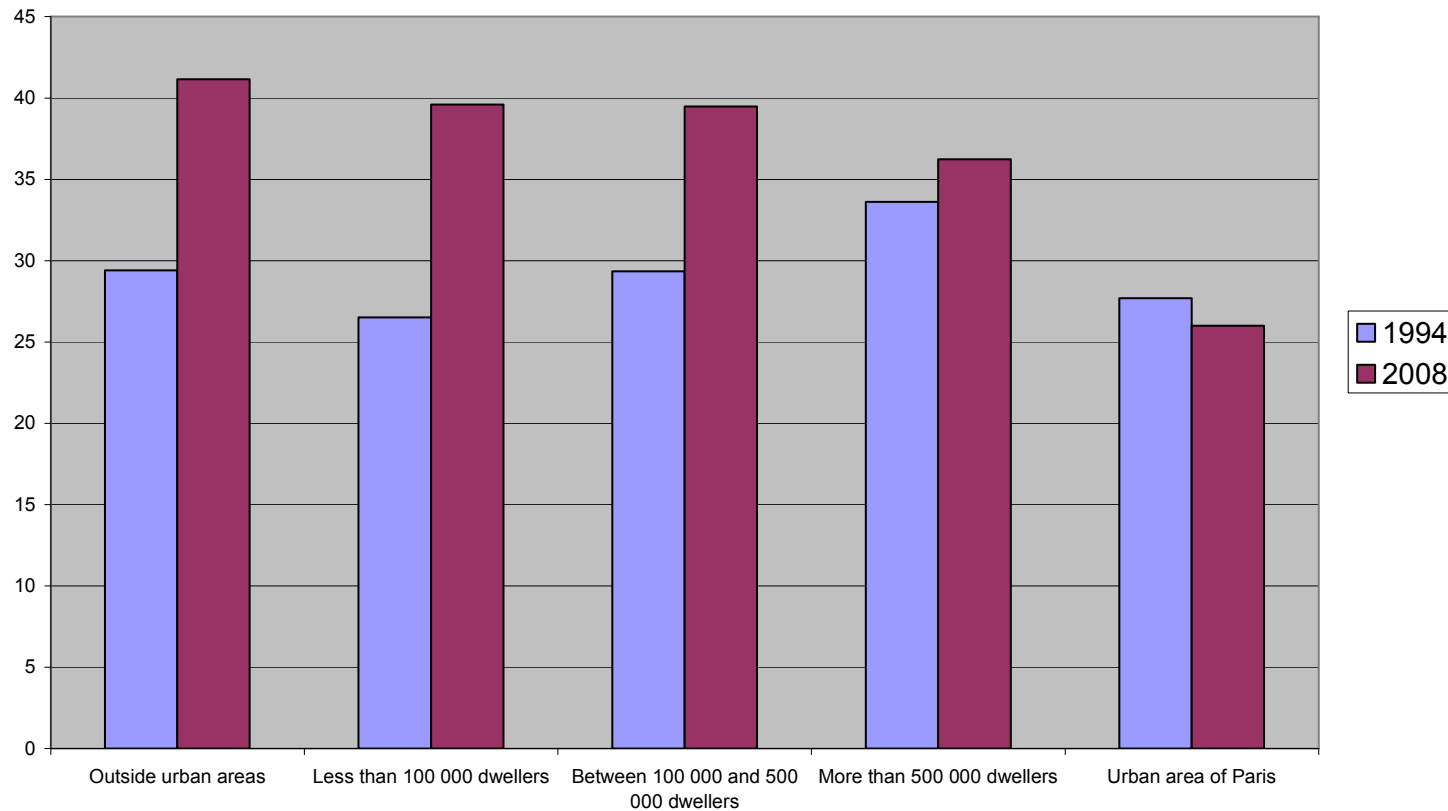
Yearly average car personal long-distance mobility, in 1994 and 2008, depending on the size of urban areas



Changes in personal long-distance mobility, depending on urban density



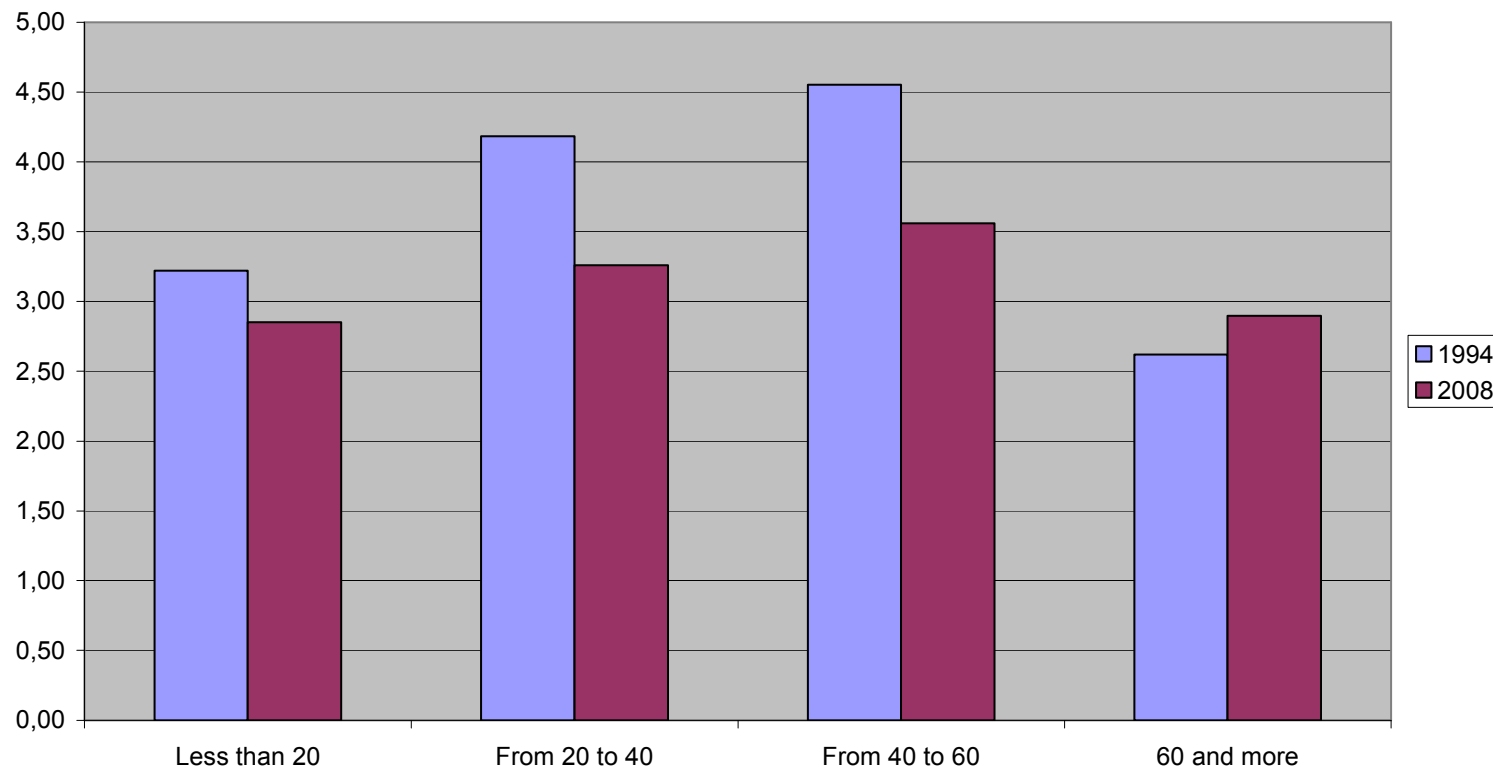
Rate of individuals within households holding at least two cars, depending on the size of urban area, in 1994 and 2008



The generational factor in changing behaviours



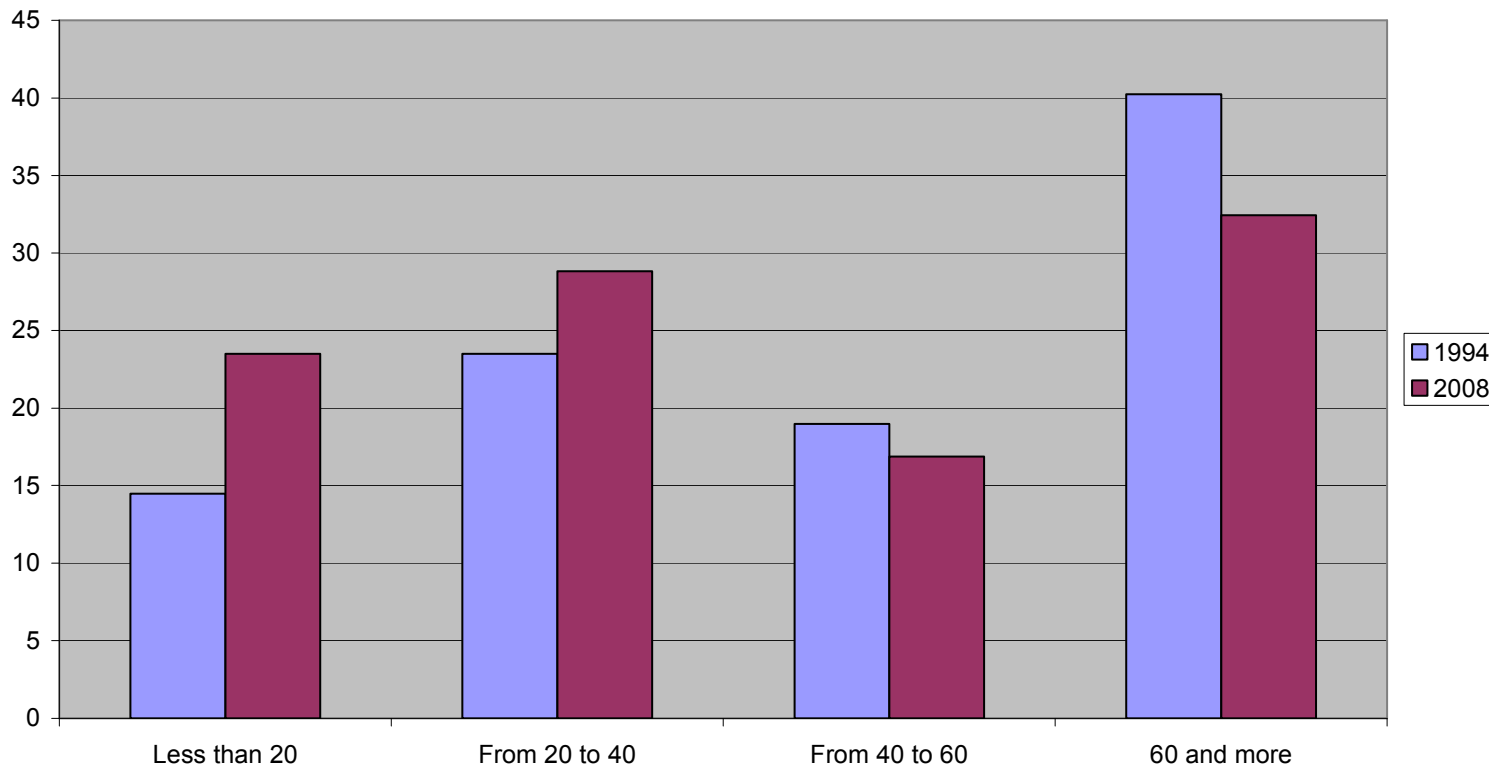
Average yearly individual long-distance car personal trip frequency, depending on age, in 1994 and 2008, in the Paris urban area



The generational factor in changing behaviours



Rate of individuals within "no-car" households in "Ile-de-France", in 1994 and 2008 (%)



Some conclusions and assumptions



- A) The facts :

- Long-distance mobility and car equipment dynamics correlated with urban density.
- opposite trends in long-distance mobility and car equipment growth between densest urban territories, where alternatives may be found to car in regular trips, and other territories, where car remains essential to daily life.
- Decrease in car long-distance mobility (in < 60 groups) and even car equipment (in < 40 groups) in the urban area of Paris.

Some conclusions and assumptions



- B) The assumptions :
 - Changes in people's attitude to car in Paris urban area, among currently working people, may be related to congestion, parking difficulties, car costs.
 - Gains of accessibility and time related with modern collective transport modes (high-speed train and plane) are also higher in densest urban areas, and especially in the urban area of Paris. Train may replace car for one part of the lost car trips.

Some conclusions and assumptions



- Behavioural change in currently working generations living in densest urban areas may itself receive at least three distinct and may be complementary explanations :
 - Under growing economic uncertainty about their personal situation, people's relationship to car becomes more and more sensible, dependent on basic utility, explaining differential trends between urban and non-urban, central and peripheric areas.
 - Environmental awareness may have become stronger in currently working generations.
 - Lost time and stress caused by congestion has become so high that car is less and less often considered as an effective mode. Changes in short-distance mobility would also have side-effects on long-distance car trip frequency.