

Urban Mobility for 11-18 year old adolescents

« Growing up on the move »

Some Quantitative Results and Questions from Parisian Metropolitan Mobility Survey

Marie-Hélène MASSOT

Research Director

Laurent PROULHAC

Research Assistant

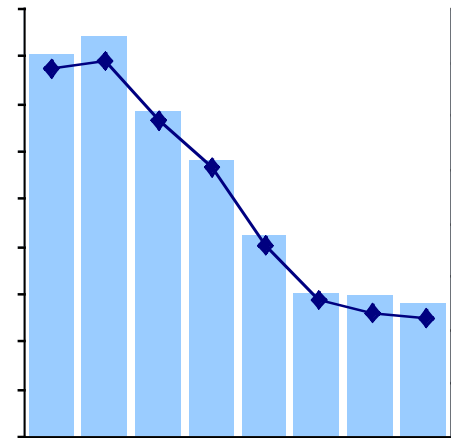
Laboratoire Ville, Mobilité, Transport

The French National Institute for Transport and Safety Research - **INRETS** - The Ecole des Ponts - **ENPC** -

First, Our Major Hypothesis

- **Autonomy in mobility is a key factor for maturity and for the construction of individual and social identity**
- **Autonomy in mobility is constructed step by step under parental control and negotiation**

Age of Child	6-10 year old	11-18 year old
% of accompanied trips / child trips per day	73%	26%
Nb of accompanied trips per day by child	2.25	0.87



Second, our precise objectives

- **To determine the mobility patterns of adolescents and the degree of autonomy of this mobility**
- **To appreciate the role of age, socio-economic background, density of living environment in the acquisition of autonomy**

Methodology



Quantitative Analysis of Mobility patterns of 11-18 year old people based on

- **Household travel survey :**

The 2002 Paris Region comprehensive travel survey which records all trips made on a typical working day and on each day of the week-end by all the individuals living in the Paris region (called EGT)

- **Some particular indicators :**

- To describe mobility patterns of adolescents in relation with their age as well as their familial, residential and educational context
- To specify the autonomy of their mobility patterns, by type of day and type of out of home activities ...

Daily mobility indicators and patterns



1. Major Daily Mobility Indicators

Social Interactions

- Mobility Intensity : Number of trips a day per individual
- Number and type of activities per day and per individual : school, leisure, sport, health, visits to friends and family, shopping

Spatial Interaction

- Number of kilometers per day, spatial distribution of trips for each activity

Organisational « autonomy »

- Transport modes by trip : Walking, Cycling, Public Transit, Passenger Car
- Indicators of individual autonomy : % of daily trips made alone, % of daily trips made accompanied

Daily mobility indicators and patterns

2. Daily Mobility patterns

✓ Patterns or degrees of individual Autonomy

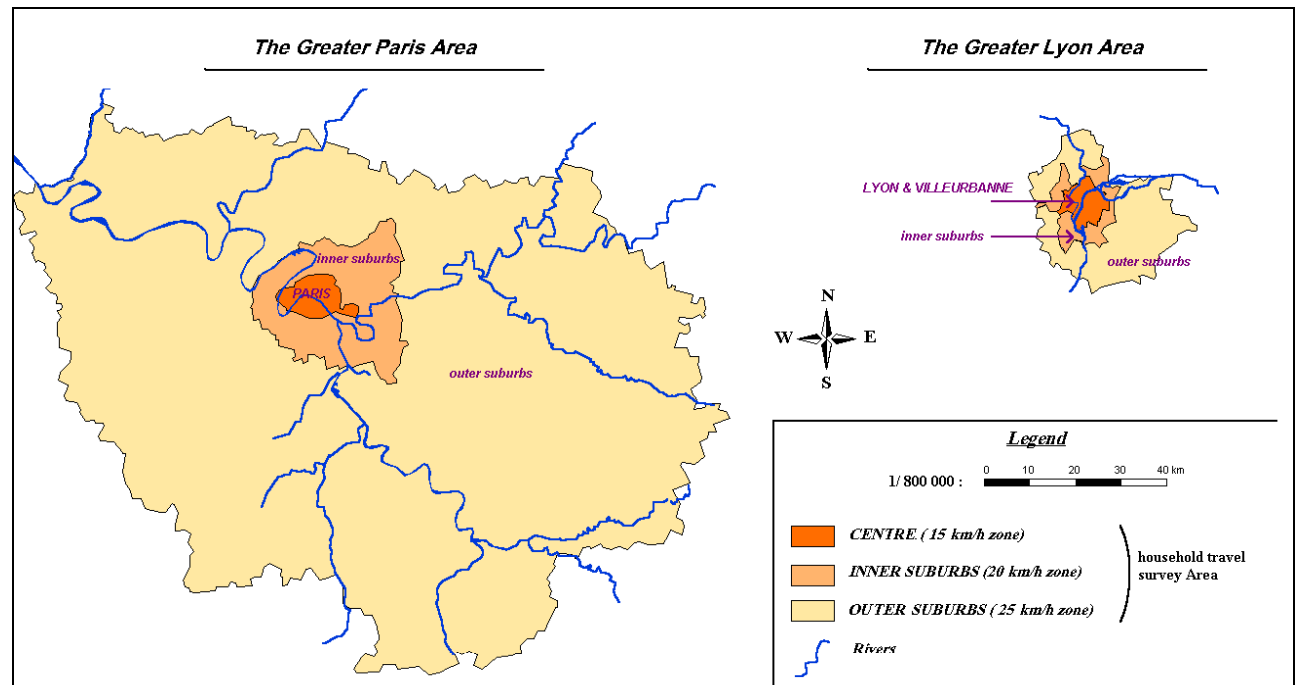
Dependent Mobility :	All daily trips made accompanied
Semi-Autonomous Mobility :	Some trips alone, some trips accompanied
Autonomous mobility :	All daily trips made alone

✓ Degree of individual modal « attachment »

Mode Exclusive Mobility :	All trips made with the same transport mode
Multimodal Mobility :	Mode varies from one trip to another

Description of survey and data

	Number of surveyed households	Number of respondents	Number of trips described by respondents
Metropolitan inhabitants			
Surveyed sample	11 291	23 656	91 243
Weighted sample	4 293 508	9 643 887	33 653 600
11/18 year old individuals attending to school and without driving licence			
Surveyed sample		2 240	7 740
Weighted sample		928 761	3 139 210



Residential location of the adolescents

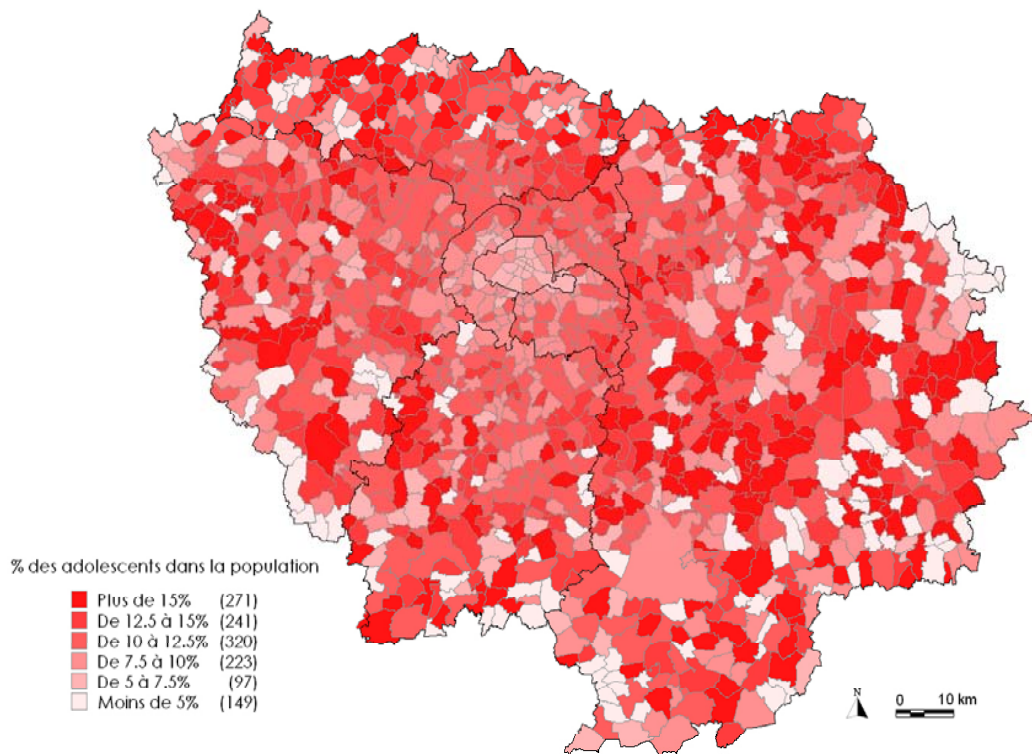
The 11-18 year old people account for 11% of the metropolitan population

High over-representation of young people in the less dense metropolitan areas

Less than 5% in Paris

Less than 10% in inner suburbs

More than 20% in outer suburbs



Mobility indicators and patterns for weekdays



- **On an average day, an adolescent makes**
 - **3.4 trips**
 - **7.5 kilometers**
 - **And spent 64 minutes on travel**

- **On an average day,**
 - **60% of the young population are totally autonomous in mobility**
 - **10% of the young population are totally dependant in mobility**
 - **30% of the young population are semi-autonomous in mobility**

- **On an average day**
 - **27% of their trips are made with another person**
 - **37% of trips for going to school, 47% for coming home, only 17% for other purposes**
 - **Only 9% of adolescent have one or more activities (and mobility) after school**

Mobility indicators and patterns for weekdays



Educational program, age and familial context are the major determining factors mobility (intensity and patterns)

- A great majority of young people are autonomous in mobility
- For the great majority, autonomy in mobility is associated with **school** trips and **walking** or **Public Transit** use
- A more intensive and diversified mobility is associated with **semi-autonomous profile** and car « dependance » for not school trips.

	Autonomous	Dependant	Semi Autonomous
Together	60%	11%	29%
11-14 year old	50%	16%	34%
15-18 year old	74%	7%	19%
Trips a day	3,1	2,9	4,4
11-14 year old	3,1	3,0	4,4
15-18 year old	3,1	2,6	4,4
% other trips purposes	12%	20%	27%
11-14 year old	9%	22%	25%
15-18 year old	14%	18%	29%
Distances a day	6,4 km	10,1km	9,3 km
11-14 year old	3,7	9,2	7,2
15-18 year old	8,3	12,3	12,9
Modal Repartition	Walking : 61% PTransit : 36%	Car P. : 75% Walking : 16%	Walking : 46% Car P : 36%

Mobility indicators and patterns for a weekday



- **The semi-autonomous profile is attached**
 - To high revenues and high motorisation rate (two cars) families
 - Live in both densely areas or not for the 11-15 year old adolescents
 - In not dense areas for the 15-18 year old adolescents

- **The autonomous profile is attached**
 - For the 11-15 year old with intermediate or low revenues with one car, monoparental family and mono active family.
 - For all the 15-18 year old living in dense areas

Residential Location	Autonomous	Dependant	Semi Autonomous
11-14 year old	50%	16%	34%
Central /dense areas	53%	18	33
No dense areas	45%	14	37
15-18 year old	74%	7%	19%
Central /dense areas	78%	5%	17%
No dense areas	66%	9%	25%

Mobility indicators and patterns for a week-end



A great majority (85%) of adolescents realize at least one out of home activity during the week-end and two third at least 2 activities.

But also 15% of adolescents doesn't realize any activity and 25% just one activity : an important part of adolescents has a E-poor C activity program

The most diversified activity program is on Saturday :
A time for shopping for visiting friends and family, for practising sports

Percentage of adolescents

Freetime activities	Weekday	Saturday	Sunday	Saturday + Sunday
Zero activity	91%	24%	38%	15%
One activity	9%	45%	46%	24%
Two or more activities		31%	16%	61%

Percentage of activity by type and week-end day

	Saturday	Sunday
Shopping	22%	13%
Daily purchases	3%	4%
Shopping	19%	9%
Visit	44%	46%
To family	10%	14%
To friends	18%	20%
Health, others	18%	12%
Leisure	34%	41%
Sport	15%	15%
Restaurant, spectacles	11%	12%
Promenade	8%	13%

Mobility indicators and patterns for a week-end



For the great majority

More personal activities but much less autonomy in mobility

11-14 Year old	Autonomous	Dependant	Semi-Autonomous
Weekday	50%	16%	34%
Saturday	24%	51%	25%
Sunday	34%	48%	18%

For all adolescents
11-14 and 15-18 Year Old

15-18 Year Old	Autonomous	Dependant	Semi-Autonomous
Weekday	74%	7%	19%
Saturday	43%	31%	26%
Sunday	47%	38%	15%

But much less autonomy for
the adolescents living in
Outer Suburbs

	Weekday	Saturday	Sunday
% of accompanied trips	26%	55%	66%

% of accompanied trips	11-14 Year old		15-18 Year old	
	Central Areas	No dense Areas	Central Areas	No dense Areas
Saturday	57%	75%	42%	51%
Sunday	70%	82%	53%	64%

Mobility indicators and patterns for a week-end

On Saturday and on Sunday the semi-autonomous still are the population with the highest mobility

The semi-autonomous realize respectively 65% and 50% more trips than the others, and longer distances than autonomous adolescents

Saturday	Autonomous	Dependant	Semi-Autonomous
Trips a day	2.6	2.6	4.4
Distances per day	5.3 km	14.1 km	16.2 km
Transport Modes			
Public Transit	32%	6%	27%
Passenger-Car	0%	79%	26%
Two Wheels	8%	0%	2%
Walking	60%	14%	44%
Sunday			
Trips a day	2.29	2.27	3.41
Distances per day	5.5 km	14.3 km	9.6 km
Transport Modes			
Public Transit	18%	5%	9%
Passenger-Car	0%	75%	23%
Two Wheels	15%	2%	7%
Walking	66%	18%	58%

Mobility indicators and patterns for a week-end



On Saturday the children from households with of highest incomes are the population with the highest numbers of trips

	White Collar	Grey collar	Blue Collar
Trips per Saturday	3.1	2.4	2.6
Trips per Sunday	1,8	1,8	1,5

**Because they have the highest level of out of home activities
Because they are most numerous in semi-autonomous
population**

Freetime activities	White Collar	Grey collar	Blue Collar
Zero activity	19%	26%	25%
One activity	45%	43%	46%
Two or more activities	36%	31%	29%

Some conclusions

In the french educational and family context

- **On a weekday the autonomy in mobility of adolescents is high in relation with the school location. The differences between populations are not high, because the dominant profile is the autonomous profile.**
- **On a week-end, the dependence in mobility is high for all. On Saturday differences exist. The question of autonomy is not only a question of the proportion of accompanied trips. It's also a combination of spatial, cultural and economic environment of adolescent. These combination ensures a highest level of out of home activity, moving alone sometimes and moving accompanied.**

% of accompanied trips	White Collar	Grey Collar	Blue Collar
Saturday	55%	60%	48%

The 15-18 year old from blue collar household and from outer suburbs are the most defavorised population with regard mobility and autonomy