

# Urban Mobility for 11-18 year old adolescents

## « Growing up on the move »

### Some Quantitative Results and Questions from Parisian Metropolitan Mobility Survey

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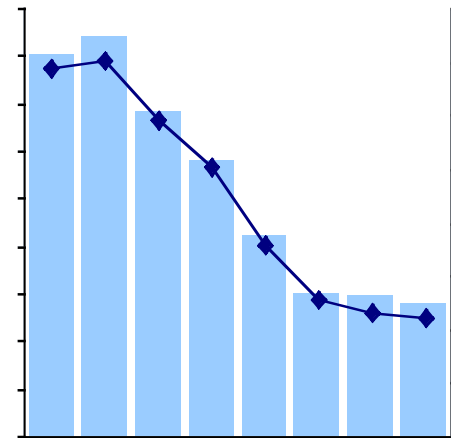
**Laboratoire Ville, Mobilité, Transport**

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

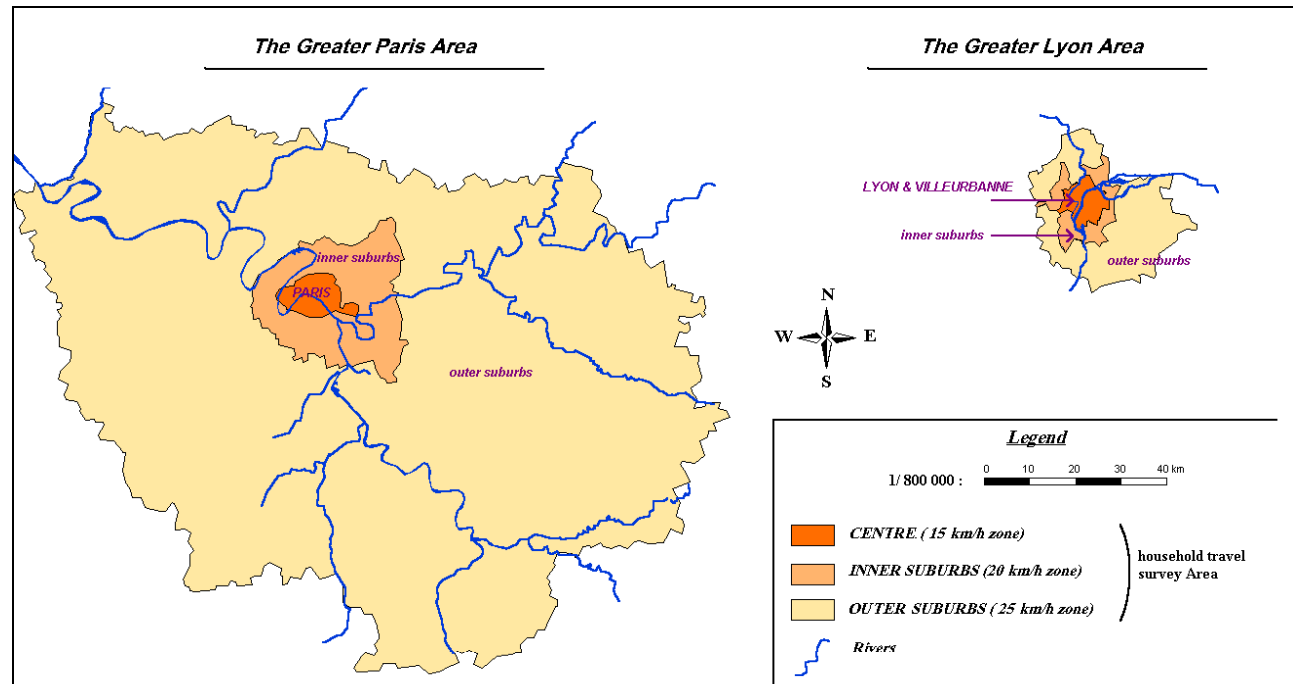
<b>Dependent Mobility :</b>	<b>All daily trips made accompanied</b>
<b>Semi-Autonomous Mobility :</b>	<b>Some trips alone, some trips accompanied</b>
<b>Autonomous mobility :</b>	<b>All daily trips made alone</b>

### ✓ Degree of individual modal « attachment »

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

# Description of survey and data

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



# Residential location of the adolescents

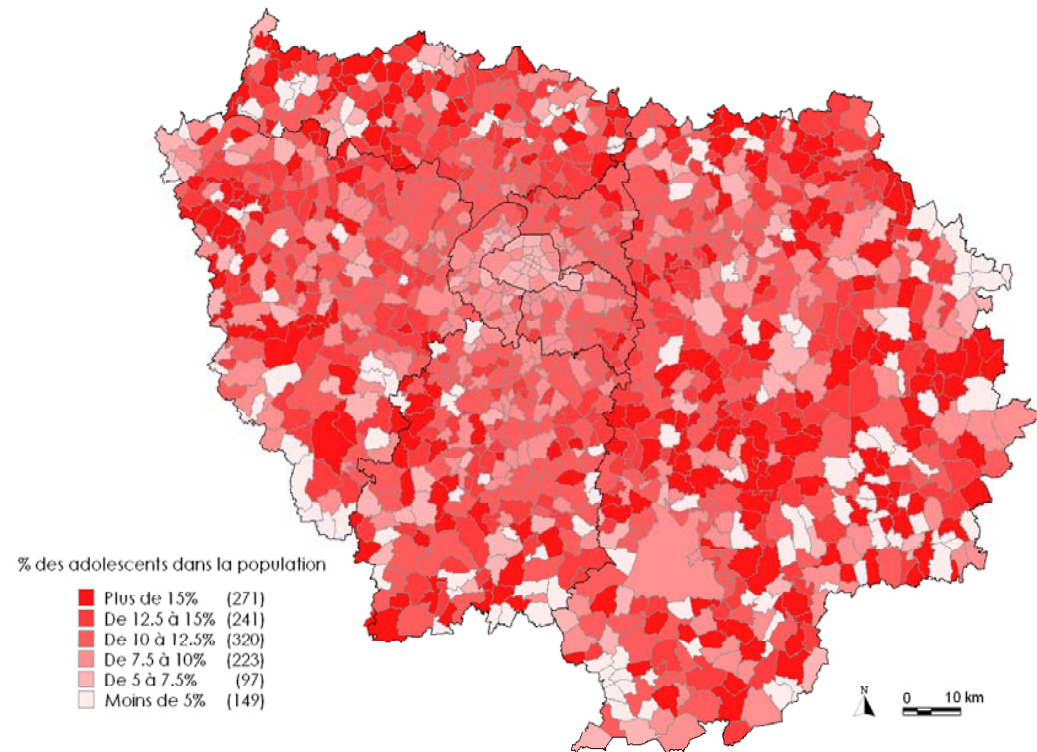
The 11-18 year old people account for 11% of the metropolitan population

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 totaly autonomous in mobility**
  - **10% of the young population are totaly 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
<b>Together</b>	<b>60%</b>	<b>11%</b>	<b>29%</b>
11-14 year old	50%	16%	34%
15-18 year old	74%	7%	19%
<b>Trips a day</b>	<b>3,1</b>	<b>2,9</b>	<b>4,4</b>
11-14 year old	3,1	3,0	4,4
15-18 year old	3,1	2,6	4,4
<b>% other trips purposes</b>	<b>12%</b>	<b>20%</b>	<b>27%</b>
11-14 year old	9%	22%	25%
15-18 year old	14%	18%	29%
<b>Distances a day</b>	<b>6,4 km</b>	<b>10,1km</b>	<b>9,3 km</b>
11-14 year old	3,7	9,2	7,2
15-18 year old	8,3	12,3	12,9
<b>Modal Repartition</b>	<b>Walking : 61% PTransit : 36%</b>	<b>Car P. : 75% Walking : 16%</b>	<b>Walking : 46% Car P : 36%</b>

# 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	<b>50%</b>	<b>16%</b>	<b>34%</b>
Central /dense areas	53%	18	33
No dense areas	45%	14	37
15-18 year old	<b>74%</b>	<b>7%</b>	<b>19%</b>
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
<b>Shopping</b>	<b>22%</b>	<b>13%</b>
Daily purchases	3%	4%
Shopping	19%	9%
<b>Visit</b>	<b>44%</b>	<b>46%</b>
To family	10%	14%
To friends	18%	20%
Health, others	18%	12%
<b>Leisure</b>	<b>34%</b>	<b>41%</b>
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**

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

# 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.**

<b>% of accompanied trips</b>	<b>White Collar</b>	<b>Grey Collar</b>	<b>Blue Collar</b>
<b>Saturday</b>	<b>55%</b>	<b>60%</b>	<b>48%</b>

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