DESIRE FOR OWNERSHIP AND CULTURE OF USE OF PRIVATE CARS

Possible impact on the development prospects of emerging cities

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PREFACE

The ideas that follow have gradually emerged out of some fifteen studies and field surveys conducted by SARECO over the last twelve years. These field surveys were carried out in cities characterised by low car ownership rates, with populations ranging from 1 to 15 million people.

The solution that emerges is innovative, suggesting a certain trend in the culture of movement. It is not a ready-made package: there is much that remains to be refined or even invented.

ABSTRACT – CONCLUSION

The different ideas presented below are based on two major preliminary observations:

- What we know so far about human behaviour in relation to the private car reveals a very deep desire for ownership, because it is associated with the notions of “freedom to come and go” and “identity”, whereas actual use of the private car is strongly conditioned by context and can vary greatly from one local culture to another.
- For equivalent levels of transport service expressed in flow capacity, the infrastructure costs of mass transit – frequent bus service, tram, metro – are much lower than the infrastructure costs associated with the private car: primary road network, central public car parks...

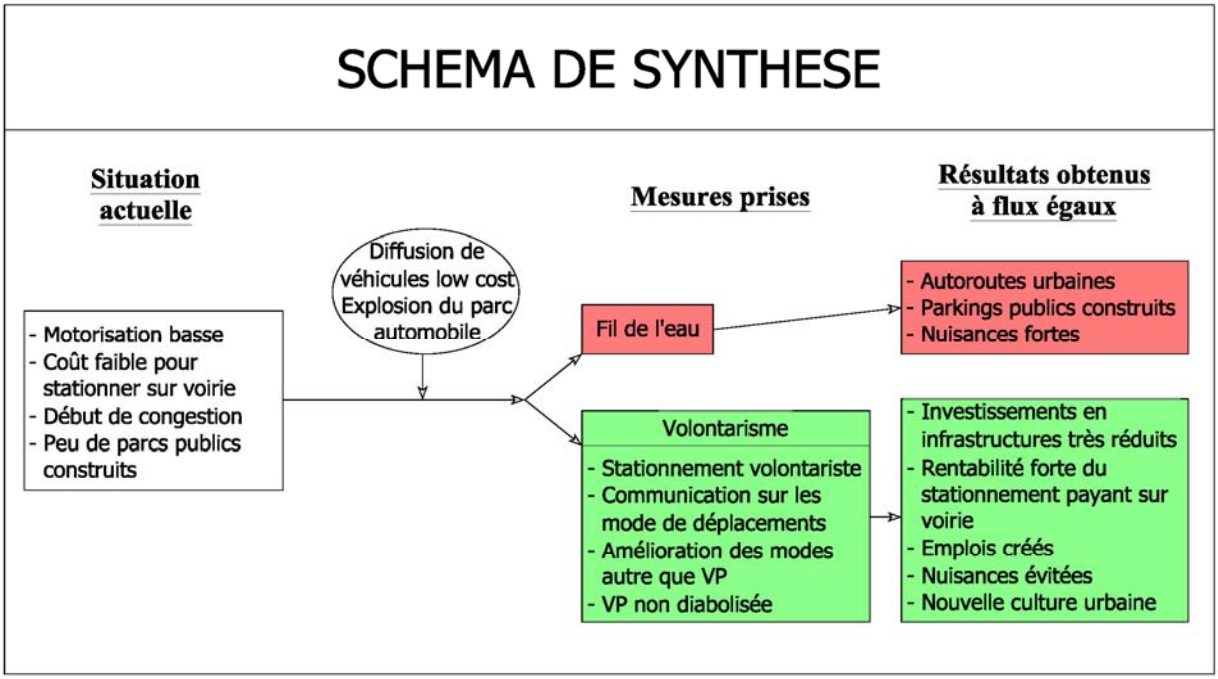
Given these facts, the field surveys and studies conducted in recent years by SARECO in some fifteen cities with low car use suggest that active parking organisation policies (pricing, controlled creation of off-road spaces...) combined with the development of alternative transport provision **will, in the short and medium term and for equivalent transport service, result in:**

- **Very significant savings, estimated at billions of euros**, in transport infrastructure construction budgets: public transport, expressways, car parks... allowing land and finance to be allocated for other purposes...
- Significant environmental and quality-of-life gains: greenhouse gas emissions, noise and air pollution, accidents...

Such deliberate organisation is certainly politically acceptable, since:

- They do not affect car ownership and are even entirely compatible with policies that favour household car ownership in countries where this is a sensitive subject,
- As most of the population does not own a car, it will be all the easier to change, especially through parking and the culture of car use,
- Positive and tangible effects will quickly emerge: more comfortable travel conditions, particularly in mass transit systems, job creation,... and can be effectively supported through communication campaigns.

The diagram below summarises the opportunity factors in this kind of policy initiative.



We see the possibilities for two very different kinds of future. The gains likely to result from the active policy scenario are so great that it would be a great pity if this approach were not taken further. Doing so will involve:

- Firstly launching large numbers of experiments in city centres: introduction of roadside pay parking areas or creation of high-charge areas in centres where pay parking already exists, and backing these actions with communication campaigns. Here, the target of increasing parking charges until the proportion of empty parking spaces reaches 15% or 20%, as practised in London's City of Westminster, whilst ensuring that social parity is maintained, would seem excellent.
- Secondly, finding out what support measures should be taken alongside roadside pay parking, in particular:
  - How to improve public transport provision?
  - What norms to recommend for the size of private car parks incorporated into future buildings in centres of activity?
  - Policies for twomotorcycles and bicycles? These modes currently play a very important transport role in many cities.
  - What role to give to shopping centres? They seem to be springing up spontaneously, with attached car parks, in the centres of many emerging cities: Cairo, Tunis, Belém, Kiev,...
  - What role should communication play?

Finally, the benefits and savings that can be achieved, and operational breakeven point, need to be quantified more accurately.

Given the imminence of a sharp rise in car ownership in many emerging cities and the expected arrival of “low-cost” cars, we believe that the measures described above have become urgent.

1. PRIVATE CAR OWNERSHIP AND USE

It would seem that the decision to own a car and the decision to use it once one owns it, are taken in very different ways: the factors involved are not at all the same.

1.1. Car ownership

The decision to own a car arises partly out of a desire for freedom, and partly out of a desire for identity and social status.

a) The freedom to come and go

Owning a car means having the freedom to use it for any necessary or desired journey at any time; this is particularly important at times when public transport is poor (at night…).

- The word "freedom" (to come and go) in this definition immediately places a very high premium on the desire for car ownership.
- So-called road rage and even conflicts between drivers arise from the feeling that the "other" has abusively and unacceptably undermined one's "freedom" of movement.

b) Social status and identity

- Owning a car or – even better – "a nice car", is frequently a factor of social differentiation, especially in urban contexts where car ownership is low: the privileged few…
- The "car" often receives special attention: purchase of accessories, careful cleaning and servicing,…

c) Consequences

It would seem that car ownership belongs to the realm of the desires and therefore the irrational, which has the following consequences:

- Financially, car owners tend to underestimate journey costs when making financial choices; many costs associated with car ownership are almost never included: depreciation, insurance costs, interest on loans, cost of accidents…
- The desire for ownership is particularly strong in those who do not yet have the means to buy a car or those who make significant financial sacrifices to own one. This explains why it is essentially amongst the rich in the richest countries that we find a spontaneous renunciation of car ownership for reasons other than financial.

1.2. Car use

In contrast with car ownership, the decision to use the car reflects the contextual – in particular financial – constraints associated with one form of transport or another.

a) Urban conditions without constraints

A car owner, who will tend to underestimate running costs (cf section 1.1 above), will use that vehicle virtually all the time if subject to no constraints such as: traffic jams, parking or congestion charges... So for example:

- In a study conducted in Tunis in 1997, the "cultural" definition of the parking "needs" of an office building was the number of car-owning employees in that building.
- On the edge of the centres of French provincial towns, even large ones (e.g. Bordeaux before the tram), in areas where parking is free and traffic not too much of a problem (30 minutes journey or less), almost 85% of people commute by car: only those without a car or driving licence do not drive to work.
- In the Paris area, despite the quality of public transport which can be more efficient than the car, levels of car commuting can be as high as 70%.

b) The role of constraints

The context can radically transform modal choice in car owners: from the 85% found in provincial towns, commuting by car drops to 5% in the first, second, third and fourth arrondissements of Paris: **i.e. less by a factor of 17**

One factor plays a major role in this shift in modal choice: charges and particularly roadside parking charges.

Example

Today in London, in the City of Westminster, the current policy is to monitor roadside parking carefully and to raise charges until empty parking spaces reach a level of 15%.

The current hourly charge based on these objectives can be as high as £4.40 (more than 5 euros) and is generally £4.

In parallel, the monthly cost of a parking subscription is around €680.

The result is that it is common to find empty roadside parking spaces in the City.

Other factors also play a role in the choice of whether or not to drive:

- It is clear that the rate of car use for commuting in arrondissements 1 to 4 in Paris is also linked with the exceptional quality of public transport provision in that area.
- The (partial) ban on car travel into the centre of many Italian cities has proved spectacularly effective.

- In France, business transport plans designed to minimise car use for commuting, with the help of a set of carrot and stick measures, established through dialogue with employees, have had significant effects.

Example 2:

The towers of La Défense in Paris cover some 80 ha, so this sector can be seen as fairly homogeneous in terms of public transport provision.

A survey conducted in each tower (minimum 25,000 m²), over a total of 650,000 m² of office floor space, reveal that ***employee parking demand varied from 1 to 5*** *between the tower with the least demand (4.8 subscriptions per 1000 m²) and the one with the most demand (26.1 subscriptions per 1000 m²), a difference largely linked with whether or not employers provided parking for their employees.*

- The growth in certain operating costs: petrol, "leisure" or "commuting" insurance… plays a role.

1.3. Conclusion

Car ownership is associated with a desire that is very hard to influence, in so far as it reflects the human aspiration for a notion of "freedom".

By contrast, car use has proved relatively easy to influence through deliberate policy. **This influence will be all the more effective when directed at populations who have not yet acquired a culture of car dependency because they do not yet own a car: they are not required to "go backwards" in their habits.**

2. CITIES WITH LOW CAR OWNERSHIP: PARKING IN CENTRAL AREAS

2.1. Situations observed

Field surveys carried out over the last 12 years in the centres of cities with low levels of car use reveal a certain number of similarities with regard to observed parking conditions.

Important preliminary remark:

It is undoubtedly the case that not all cities in the world's emerging countries precisely follow the different trends described below. Some have gone further than others down the road of car use and building infrastructures for private cars. One obvious example is Beijing where the level of car use has doubled in 5 years, and which is now experiencing serious congestion problems, despite its parking charges and its 5 "Orbital Motorways".

However, all these cities are still concerned to varying degrees, because they are still at the stage where car use is growing: they still need to make sure that things do not go out of control.

a) Roadside parking

Where they exist, roadside parking charges are generally a recent phenomenon:

- Introduced in Beirut in 2007 as part of a World Bank project,
- Introduced in Marrakesh in 2010,
- Introduced in Beijing after 2005,
- In 2005, in Hanoi, parking charges had not been introduced.

Many cities are still at the stage of informal "controls" by parking wardens who receive payments which resemble a combination of tips and piece time wages.

This is true, for example, of Belém in Brazil (apart from 200 official pay spaces), and of Fez and Marrakesh in Morocco until the end of 2009.

Overall, the charges are low relative to the purchase and operating cost of a private car.

b) Off-road public car park structures

These car parks are very few in number and generally greatly underused:

- In Tunis in the late 90s, the Kasbah car park, 10 years after opening, had a 50% occupancy rate (600 spaces out of 1200) despite low charges.

- In Beirut, in a study conducted in 2000, there were no sites that were deemed to meet solvent demand, out of a total number of projects representing 15,000 parking spaces (at the time, there were no public car parks built for commercial ends).
- In May 2008 in Marrakesh, in week time, the city's only underground car park, under Place du 16 Novembre, which opened in 2006, housed fewer than 20 cars in the morning around 10 am or in the evening around 6:30 pm.

Remark: On the other hand, these cities have pay car parks open to the public built in partnership with a large vehicle attractor, often a shopping centre:

- *Iguatemi Centre car park in Belém in Brazil,*
- *ARENA Centre car park in Kiev in Ukraine (the only city centre car park).*

c) Existing parking culture

The usual frame of reference is the development of infrastructures (car park, expressways) already found in the most developed countries.

In virtually all the field studies conducted, the question arose of the value of sites for the construction of public car parks, since building such car parks was automatically perceived as a necessity. The answers given about the short-term need to build such car parks were almost always negative.

In addition, this frame of reference is seen in a very positive light because of the important role it assigns to the car, a mythical object that everyone wants to own, without being aware of certain structural faults that are often encountered in cities in developed countries:

- Roadside parking charges that often work through penalties for infractions that users resent, with rates of compliance that are very often low,
- Inconsistencies in charging, with car parks being more expensive than roadside parking, whereas the latter is perceived as more convenient,
- Public car parks that are underused by visitors, and therefore apply subscription charges that do not cover costs, thereby attracting more cars,
- Massively underused private residential car parks (more than 20,000 empty spaces in Paris)

An advance awareness of these issues would prevent a great deal of waste.

d) Car ownership

In most emerging cities (all of those surveys by SARECO), car owning households are a small minority.

Remark:

It should be noted that the situation described above, both in terms of infrastructure and car culture, is quite close to that of the Paris region in the early 1960s:

- *There was no roadside pay parking in Paris (introduced after 1970) as compared with 250,000 such places today,*

- *There were only 2 concession car parks (Bergson and Marché saint Honoré), as compared with 142 today, accounting for 70,000 spaces,*
- *The only expressways were the West motorway to Versailles and the South motorway to Orly,*
- *There were very many infrastructure projects.*

Car ownership in the Paris Region was already much higher than currently exists in many of the cities to which this analysis relates.

2.2. Resulting prospects

The arrival of low-cost vehicle production is very much a live issue. **If no corrective measures are taken, the result will be:**

- **An explosion in private vehicle traffic and parking requirements,**
- **Chronic congestion,**
- **The building of infrastruture (car parks, expressways),** in line with the "standard model", at a rate dependent on the economic strength of the cities concerned, **with the inevitable accompanying drain on the public purse**

3. ONE ESSENTIAL FACTOR: THE POTENTIAL ROLE OF PARKING

It should be noted that parking plays a very important role among the constraints that influence private car use: people do not drive to a destination where they know they will find nowhere satisfactory to park.[1] The clear consequence of this is that when parking constraints are tightened in a given neighbourhood, private car traffic into that neighbourhood will drop sharply: **hence the opportunity of implementing tough parking policies in the densest areas of activity which generate the most transport demand. The goal is to create a culture of moderate car use before car ownership explodes.**

3.1. The main elements of such a policy would be:

- A gradual introduction of roadside parking charges in all central areas. The operational features could be as follows:
  - Charge collection service if possible: this solution is generally well suited to the local context and, in addition, creates jobs,
  - tariffs that are as "motivating" as politically possible: the aim is to restrict the growth of traffic flows into central areas as much as possible (ideally, to keep them stable). **For example, the goal of gradually increasing charges until 15% of parking spaces remain free, as practised in the City of Westminster, is technically very appropriate.** However, this does not mean creating a process of segregation based on ability to pay, which would be socially unacceptable; there are many potential ways to avoid this: for example, creating 2 charge rates, one for "low-cost" or "green" vehicles, another for the rest.
  - The creation of roads (or roadsides) with parking specifically for residents or with a preferential rate for residents,
  - Effective penalties, for example: use of clamping for frequent offenders;
- Support measures to promote the development of alternative modes: public transport, bicycles and motorcycles, car sharing, walking. The aim is to find a response to the continuous growth in mobility demand which occurs with any economic development and is likely to be exacerbated by the rural exodus. This move from the country into cities with low levels of car ownership is generally likely to continue for a long time,
- Checks on the building of off-road parking spaces in the activity centres concerned. Given the low structural profitability of off-road public car parks, their construction is likely to be very limited unless subsidised: their development will depend on the

[1] The word "satisfactory" is subjective, entailing responses that will vary from one person to the next.

community's financial resources. The main reason for the building of such car parks should be to improve the urban environment: replacing parked cars with pedestrian areas, green spaces...

- **Significant and continuous communication campaigns over several years to change attitudes to car use.**

3.2. Tough political action on roadside parking is acceptable

A number of arguments suggest that people will accept such policies without conflict.

a) They do not run counter to the desire for car ownership

Car ownership could even be supported, in terms of parking, by the introduction of resident only parking or preferential charges for residents.

This factor is essential because for a car owner, car ownership is about the freedom to come and go and about social status, particularly sensitive factors that it is difficult to influence (cf. section 1.1 above).

Important remark

It is clear that the targeted parking policy described in this article is in no way incompatible with policies to restrict car ownership already practised in certain big cities: Singapore, Shanghai, and more recently Beijing. In fact, the two policies are entirely complementary, since both have the same goal of limiting car traffic.

b) Constraints that are perceived as relatively moderate

The only new constraints will be the deliberate introduction of charges for roadside parking. The impact of these constraints on the population will be significantly reduced by the following factors:

- Only a minority of the population will be affected, given the low level of car ownership. In addition, this minority will be the most well-off, those able to bear the cost.
- A system of collectors of roadside parking charges, well-suited to emerging countries, is a relatively non-aggressive method: little or no repression, maintenance of human relations, a positive image of job creation, easier to reverse: no parking meters or ticket machines to remove...
- Pay areas can be extended gradually to avoid any impression of draconian measures.
- Similarly, charge increases can be introduced gradually.

c) The outcomes can be communicated positively, making any sense of constraint easier to swallow.

The positive impacts of such a policy include significant job creation and improvements in the quality of service provided by different transport modes: public transport, bicycles, taxis…, greater comfort and safety for pedestrians. These changes can only make a good impression.

4. VERY HIGH STAKES

There are a number of factors at stake in the policy described above:

4.1. Savings on infrastructure through the development of public transport

- Traffic infrastructures: urban expressways, tunnels...

  The growth in urban transport demand associated with rising living standards and the rural exodus should mostly be covered by the development of transport modes other than the private car, in particular mass transit systems. All these are much more efficient than the private car in terms of their capacity to carry large numbers of people in dense urban areas.

  It is reasonable to think that the infrastructure costs could be greatly reduced (see Annex), involving potentially very significant figures for a large city.

- Construction of public car parks in central areas

  Here again, the potential citywide savings can be estimated in tens of thousands of multistorey or underground parking spaces.

Overall, city-scale savings amounting to billions of euros do not seem beyond reach.

4.2. Profitability of pay parking

The use of roadside parking fee collectors will be **very** profitable in the initial years: high charges and moderate wages. It will constitute a transition to modern payment techniques (e.g. direct shift to payment by mobile phone without going through the parking meter phase).

4.3. High job generation in start-up phase

Roadside parking schemes will generate 5 to 10 jobs per 100 pay parking spaces (fee collectors, wardens, administrative staff, etc.).

4.4. Environmental and quality-of-life benefits

These will include: stabilisation of greenhouse gas emissions and other forms of pollution (noise, smell, vehicles on sidewalks…), linked with car traffic into central areas, time wasted in traffic jams, other externalities (accidents, public health,…).

Annex I

Comparison of construction costs

Mass transit systems - Expressways

Road		Metro - Regional Express Railway		Tram	
Construction costs	M€ 2006 / km	**Construction costs**	M€ 2006 / km	**Construction costs**	M€ 2006 / km
2x2 lanes	108	Grand Paris estimates 165 km, 23G€	139	Paris Tramway	30
Source LVMT - Cours ENPC		*Press articles*		*J.P. Orfeuil*	
A14	48	Underground system	100		
Source Cour des comptes - 1999		*CETE Lyon*			
Average	78	*Average*	119.5		
Capacity		**Capacity**		**Capacity**	
1 lane	2200 veh/h	Peak frequency RER A	30 veh/h	Peak frequency T3	15 veh/h
1 car	1.2 p/car	Capacity of a RER A	2000 p/train	Capacity T3 (6p/m²)	345 p/train
2x2 lanes	5,280 p/h/dir	A standard line	60,000 p/h/dir	Per lane	5,175 p/h/dir

		M€/km		M€/km		M€/km
Cost per 10,000 p/h/dir	High	205	High	23		
	Average	148	Average	20		58
	Low	91	Low	17		

The big difference between the costs estimates provided prompts us to be cautious. However, the figures in the table below suggest that a ratio of 1:5 is reasonable. If instead we use the installation costs for BRT (Bus Rapid Transit), which will probably be the first systems introduced in emerging cities, this ratio should be much higher.

Equivalent flow infrastructure cost ratio			
Road/Metro	min:	91/23	**3.9**
Road/Metro	average :	148/20	**7.4**
Road/Tram:		91/58	**1.6**