

Third prize winning paper

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The popularity of cycling has increased very considerably in France during the past five years. This rise is due to many different factors : the Paris public transport strike (1995), the Air Law (1996) relating to quality, Urban Transport Masterplans (PDU). More generally, it also relates to several urban, socio-psychological and economic trends such as; heightened respect for the environment, unemployment and financial problems, the changing image of the bicycle, air pollution, traffic congestion, noise and city planning problems. Furthermore, cycling facilities were built, including the construction of bike paths, the opening of bus lanes to cyclists, greenways, and cycle parking.

In general, it is difficult to assess the impact of such facilities on the growth of cycling. To understand how bicycle facilities are used is very important information for any local authority wanting to promote the use of bicycles. Not only it does prove that bikes are a worthwhile investment for them, but well-used bike parking facilities can also justify further resources being spent on a bike policy for a local authority.

Therefore, the following questions can be asked about cycle parking: what does a good quality cycle parking facility offer? What criteria should be chosen to judge them? Moreover, can it be said that having good quality cycle parking facilities will generate growth in the use of bicycles? Moreover, what methodological tools could be created to measure this potential influence on cycling?

To answer these questions, I have chosen to use a multi-methodological approach. In the first part of this discussion, I will define very precisely what is a good quality cycle parking facility. Secondly, I will focus on different methodological possibilities in order to evaluate in specific locations, the growth over a period of time in bicycle usage generated by cycle parking facilities.

In order to define precisely what a good quality cycle parking facility should offer, I have based my approach on several French surveys¹. These surveys were made by both public and private companies, and looked at different types of cycle parking locations: educational establishments, public buildings and stations. A complementary survey was also made which asked people to define the important criteria they used to define good quality cycle parking facilities². From these findings, I can propose the following criteria, ranging from the most to the least important in descending order :

N ^o	Criteria	Definitions	Examples
1	Cycle parking should be <i>located where there is public surveillance</i> , be it active or passive.	In, or close to busy places. Where people are walking, cycling or driving, close to the cycle park, in front of shops, offices, public buildings.	Pedestrian street, public spaces, college, university, or company reception areas.
2	Cycle parking should be	A Few metres away from the cyclists'	In front of a library, a

¹ Altermodal Bike Consulting. 1998-1999, Bike parking surveys in : Isère (38), Hérault (34), Yvelynes (78). Chambéry, France. SNCF. 1999, National bike parking survey in 80 main train stations, IGP – AM, Pôle Environnement, Paris , France.

² Sebban, A-C. 1999, A quick survey on bike parking quality (on 37 people), Paris, France.

	<i>located very close to the cyclists' destination.</i>	destination in order to avoid losing time, or having to look further away for a non-authorized parking space.	shop, a cinema.
3	Cycle parking should have a <i>specific type of security system.</i>	The cycle parking should enable the front wheel and frame to be secured together, the back wheel should also be able to be locked to a bar.	
4	Cycle parking should have <i>good lighting.</i>	Situated above or at the side, the lighting should be as close as possible to the cycle park (10 metres distance maximum).	Taxi, train station entrance.
5	Cycle parking should have <i>be covered.</i>	The roof protects the bikes from rain, snow and the strong rays of the sun.	In metal sheet, wood, plexiglass, or concrete or cement
6	Cycle parking should include <i>aesthetic concerns.</i>	Good design, choice of colour and cleanliness make cycle parking more attractive for cyclists.	Cycle parking policy of the RATP public transport system (Paris, France).
7	Cycle parking should be <i>well indicated by street directions.</i>	The more that cycle parking is well indicated in a city, the more that access to it is facilitated. It also helps to ensure the facility is well used.	
8	Cycle parking should be <i>well coordinated within a local bicycle network.</i>	A city with a complete bike network should have a good cycling practice. Cycle parking should be situated on this network, at specific locations, chosen according to a cycle parking masterplan.	French examples of bicycle masterplan : Montpellier, Lille.
9	Cycle parking should be planned, in line with a <i>cycle parking masterplan.</i>	Cycle parking should be on offer everywhere in a city : stations, hospitals, post and unemployment offices, town-halls, police stations, gyms, stadiums, swimming pools, libraries, theatres, cinemas, conference halls, show and exhibition venue places, tourist offices, museums, shopping centres, supermarkets, market places, pedestrian and commercial streets, pubs, cafés and tobacco kiosks, educational establishments.	French examples of cycle parking masterplan : Paris, Chambéry, Strasbourg.
10	A <i>map</i> of the cycle parking facilities should exist.	To locate efficiently the cycle parking that one can use for one's next stop.	Example of French city map : Grenoble.
11	A cycle parking should offer an <i>optimum amount of security ties.</i>	Cycle parking should offer from three to dozens of parking places, having taken into consideration the number of bikes parked illegally, the number of cyclists, the habits of cyclists, and the evolution of the bicycle masterplan.	

Criteria to define good quality cycle parking facilities

All these quality criteria have one theme in common: the fact that they all relate to the risk of the bike being stolen, which together with a cyclist's risk of having an accident, is a major socio-psychological curb on the use of the bicycle in France. In fact, optimising these cycle parking quality criteria means not only providing a good quality bike parking facility, but also an efficient way of avoiding the risk of bike theft.

But to what extent could one conclude that having introduced numerous, and good quality cycle parking facilities that the numbers of people cycling begin to be influenced? I will now, in the second part, focus on this specific point to decide, whether or not, the amount and quality of cycle parking facilities which are provided has any influence on the figures of cycle use?

A series of methodological tools will be created to measure this potential influence on cycling, because the usual approach (with national statistics, household surveys...) is inadequate.

But what exactly does the expression to “influence the choice to cycle” mean?

First of all, I will define it as an ***increase of the desire to cycle by people***. And the action of choosing is determined because people are choosing bicycle from many different modes of transport. So I consider that they are also choosing whether they will contribute to pollute their city or not. If this choice can be sometimes unconscious in people's mind, I hope that this concept of choice of mode of transport is always conscious in the mind of the local authority. It is the responsibility of the local authority to influence the choice to cycle. And maybe it could be a good start to create the choice to cycle by offering this new and specific option to cycle. Now, I will consider as an hypothesis the fact that bicycle parking facilities could really increase the amount of cycling.

I will try to confirm this hypothesis with the following theoretical examples of quantitative and qualitative methods: The quantitative method could be a good tool to calculate the impact of a new bicycle parking facilities. I propose for a series of counts, and a questionnaire (see N°5 below) to provide enough figures to evaluate the influence of a bicycle parking facility: the number of bicycles in the everyday city's traffic before (see N°1) and after (see N°2), the creation of the bicycle parking facility; the parking facility occupancy rate (see N°3) and turn-round rate (N°4).

I would assess that, for an operational and professional point of view, only one person is needed to complete such quantitative and qualitative surveys including observations, counts and questionnaires. This means a low cost for a maximum level of information, and also a very easy survey to do.

N°	Methods	Operations
1	Quantitative : <i>counting the number of bicycles</i> in the everyday city traffic <i>before</i> the creation of the bicycle parking facility.	In specific areas (main streets, crossings etc. and at specific hours (week days, week-end, peak traffic hours etc. <i>It consists of counting the flow of bicycles</i> , and notifying the origin / destination of the cyclists observed.
2	Quantitative : <i>counting the number of bicycles</i> in the everyday city's traffic <i>after</i> the creation of the bicycle parking facility.	In the same specific areas, and at same times as before, the method is exactly the same: <i>counting the flow of bicycles, and notifying their origin / destination</i> . Then, the interesting part is to <i>compare</i> observations of before and after. This second survey should be repeated every month for eight to twelve months minimum, to have good enough figures to compare.
3	Quantitative : <i>calculating the bicycle parking facility occupancy rate</i> .	This kind of survey must be done in precise areas in a city or a neighbourhood (shopping or pedestrian streets, stations, universities etc. on condition that they will provide bicycle parking facilities. The best moment <i>to count the number of bicycle parked</i> is to choose specific moments of the day (peak traffic hours, market day etc). The occupancy rate can be expressed in percentage terms, and the <i>formula is: number of bicycle(s) parked divided by the</i>

		number of security places on offer X 100. This method could also be used to analyse the type of bicycle parked (in percentages) in order to find the different motivations of the cyclists, for example: a city bike means a commuter cyclist.
4	Quantitative : calculating the bicycle parking turn-round rate.	To be completed in the same locations and times as before, this method takes mainly into consideration the number of parking places on offer. The survey counts the number of bicycles successively parked at a specific parking place (N°1 to N°x). Also, the duration and the type of bicycles parked can be analysed. This can be expressed for example as: from T to T' AM or PM, bicycle's lock N°x = y bike(s) parked, z % of city bikes...

Four quantitative methods to evaluate the influence of bicycle parking facilities

The combination of these four approaches could in effect define a survey on bicycle parking facilities. But it is still inefficient because of its lack of qualitative (or socio-psychological) information. The following qualitative method would therefore be a very important complement to this approach:

5	Qualitative: Making a questionnaire for cyclists.	Cyclists (20<400 people for example) can be questioned wherever: when they are parking their bicycle, or simply when they are cycling, in the street, at a crossing, on cycle path. The only difficulty is to stop the cyclist while they are moving ! But the experience proves that cyclists love to be questioned, after all it does not happen every day in a cyclists life. The essential questions to ask relate to: for how long have they been cycling in their life, where do they usually park their bicycle, if not in the bicycle parking, why not, what do they think about the new bicycle parking, for how long do they park generally, why do they cycle, are they forced to use a bicycle, where do they prefer to park their bicycle and their age, sex and profession.
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Before concluding, I would like to point out that, firstly, qualitative and quantitative surveys are always a good way to advertise the bicycle parking facilities (especially the questionnaire). Secondly, it forces a local authority to analyse their bicycle parking policy or masterplan. Thirdly, one thing is essential to remember, and I consider it almost as a rule: there is always a time gap between the creation of a new bicycle facility and the point at which cyclists really start to use it intensively. In this time gap, a “bicycle impact” survey could be very useful for a local authority, not only to wait, but also to communicate about their new bicycle parking facilities. Furthermore, making publicity and promoting the bicycle can really increase the chances of seeing the bicycle parking facilities used more quickly, and see the choice of cycling being influenced by one or more methodological tools.

It can therefore be seen that this multi-methodological approach could give a very accurate picture of the eventual impact of a bicycle parking facility. Even if it remains theoretical, one can imagine strongly, thanks to other similar methods that we have already tested (as a researcher and a consultant), that it would give enough figures and socio-psychological information about the impact of a bicycle parking facility.

It is generally difficult to evaluate the impact of a bicycle parking facility on the growth of cycle use. But this evaluation is always necessary, and sometimes strategic, for any local authority wanting to promote the use of bicycles in its area. This is because it needs to prove that bikes are a worthwhile investment, and also to justify, thanks to figures and socio-psychological approaches, that bicycle parking facilities are appreciated by cyclists. To define good quality cycle parking facilities, many criteria must be respected such as; a good location, public

surveillance, a specific kind of security system, good lighting, a cover, consideration of aesthetic concerns, directions provided, coordination with a local bicycle network, a cycle parking masterplan, a map of the locations, and an optimum number of parking points.

After having respected all these criteria, a local authority can hope influencing the choice to cycle: it means that, sooner or later, these bicycle parking facilities will increase the cycling practice. But this influence must be proved.

Simple theoretical quantitative and qualitative surveys, in a multi-methodological approach, can be used to evaluate any eventual increasing of the cycle usage: counting the number of bicycles in everyday city traffic before and after the installation of the bicycle parking facility, calculating the parking occupancy rate and the bike turn-round rate, and questioning cyclists.

With figures and socio-psychological information about the impact of a bicycle parking facility, a local authority will be able to prove whether bicycle parking facilities were a worthwhile investment or not. But it should be patient, because a bicycle facility's impact can take months to be seen, and sometimes, unfortunately, this cycling impact will never come...

To sum up, if they want to be really sure that their work has any positive influence on the choice to cycle, what can a local authority do? Is planning and installing bicycle parking facilities, and then seeking to assess its influence on cycling enough? Certainly not. Cycle parking must be systematically linked to the creation of other bicycle facilities such as; bicycle paths, bus lanes which can be used by cyclists, or traffic-calmed neighbourhoods (e.g. the French 30 km/h zones). Anyway, one can certainly say that a bicycle parking facility is always a good way to begin a bicycle policy.

Photograph N°1 :

Photograph N°2 :

Photograph N°3 :

Photograph N°4 :

Photograph N°5 :

Photograph N°6 :

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