

# **The bicycle: mass urban transportation – a paradigm shift. Case study: the City of Valencia**

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## **Abstract**

The bicycle was for decades a mode of transportation with full presence in most Spanish cities. Until the consolidation of the so-called economic miracle, in the 60s, only public transport would dispute the hegemony in the use of public space. But with the advent of economic development, the irruption of the automobile, outstandingly represented by the Fiat 600, manufactured in Franco's Spain as Seat 600, the order of things was reversed. A certain complex of "nouveau riche" was installed in the social consciousness and getting around on a bicycle was reduced to the poorer classes; even the emerging middle class, that could hardly aspire to buy a car, did not keep cycling, and opted for public transportation instead. As economic development, initiated after the Economic Stabilization Plan of 1959, was consolidated, the new middle class made the ownership of a car a symbol of triumph and the bicycle disappeared from the urban landscape. This extinction largely contributed towards the attitude of the Public Administration that, far from protecting and promoting the bicycle, saw it almost as a shameful form of transportation, unworthy of a society that pretended to be developed. Thus the use of bicycles as a mode of transportation virtually disappeared in the city, reduced to limited use as a sport. But in the last decades, the bicycle as a transport mode has come to back to the city, reclaiming a hegemony it should have never lost.

*Keywords: urban transport, bicycle lanes, urban sustainability, hegemony in the use of public space.*



## 1 Introduction

Spanish society in line with much of the Western world, from the 60s and on installed into complacency, convinced that the future would be the extrapolation of the present and the immediate past: growth and more growth, consumption and more consumption. Few voices rose against these social unanimously shared policies, but suddenly, when hardly anyone was expecting it, a cathartic fact occurred, the beginning of a radical change, the scope of which we are still not fully aware of. With the oil crisis of 1973, in the aftermath of the Yom Kippur War, Western society awoke from its chimera, to become aware that the planet was finite, that everything had a limit, and that our consumption of resources and generation of residues far above what the earth can absorb, was leading us on a blind alley. Decades after the evidence of the ecological crisis had worsened the problem and today we no longer speak about feasible or sustainable models but openly about the possibility of a civilization collapse [1].

The truth is that the shock of the first oil crisis had limited effects. After the first moments of panic, the normal supply of oil was restored and Western society returned to *business as usual*, in the absurd belief that permanent and infinite growth was possible, and to consume fossil fuels as if its availability was infinite. Few steps were taken as a result of this first warning. State-wide, since the early 90s, some experts, such as Estevan *et al.* [2], Sanz *et al.* [3] Fernández Durán [4] Torres Castejón [5], or Olmos Llorens [6], against all the odds began to question the current model, which gave priority to motorized transport, relaying, inter alia, on the ideas embodied in the seminal book of Buchanan [7]. In some academic circles cautiously this state of things also began to be questioned, but society as a whole remained dormant in a suicide consumption than every year brought us closer to disaster, especially in southern Europe, particularly in the Spanish State, where the sum of a dictatorial regime, which prevented any social and political protest, and the desire to be likened to the richest societies hindered any possibility of evolution.

## 2 Factors of change

*E pur si muove*, facing the dominant values, repeatedly broadcasted and spread by the media, in just two decades bicycle is emerging as a mass alternative transportation to motorized vehicles in the City of Valencia. Let's see the factors that have contributed to this change. We shall distinguish three: those that spring from the general thought on the ecological crisis, a global aspect; the influence of actions that come from outside the city, the exogenous ones; and actions generated inside the town, endogenous bias.

### 2.1 Global factors

As we had underlined the shock of 1973 had little immediate effect, even though in previous year the report of the Club of Rome [8] had been already published. It was not the first time that scientists had warned of a scenario of resource



depletion, but it was the first occasion that the admonition came coated with an aura of scientific authority. Fifteen years, after the Brundtland Report [9] insisted on the same thesis: the global model of unlimited production and consumption was *unsustainable* (the word appeared precisely in this report), and if things were not amended we would run into breakdown.

In some societies environmental groups became aware of the extent of the ecological crisis in the making, and were able to foresee the role cities were going to play as an important partner in the resources dilemma, and especially in transportation due to their massive consumption of fossil fuels. We will not make an analysis of the emergence of environmental groups focused on urban issues, and more specifically those who challenge the dominant model of motorized transportation, but we shall point out how the emergence of these groups has contributed in no small measure to change things.

## 2.2 Exogenous factors

In the change of hegemony from urban motorized transportation to other non-motorized modes, although still limited and at an early stage, Spanish cities have been influenced by external factors which we might call the northern winds: the example of other cities, richer, more developed that in a way have performed as a lighthouse or social reference. But this stimulus has been somehow contradictory, because although ideologically those societies were seen as a landmark, and this has to be taken and evaluated positively, we cannot say the same about the guidance of the official positions of the EU.

The Kingdom of Spain signed the Treaty of Accession to the European Union (until 1993 called the European Economic Community) on January 1<sup>st</sup>, 1986. A membership, which in relation to the issue of urban mobility (not to mention other aspects), can be considered as paradoxical. On the one hand it has allowed direct and easy access in Castilian language to countless texts and documents that the EU publishes on mobility and transport, and therefore the spread of ideas and values that support a change in strategy; but on the other hand, while the official principles questioned the hegemony of urban motorized transport, simultaneously and contradictorily investments from the EU largely contributed to consolidate and promote the very same model that was being criticized. We will give only one figure: the Kingdom of Spain currently has more kilometres of highways per capita than any other European state. As of December 31<sup>st</sup>, 2007, 14,689 kilometres of motorways were available, becoming the third country in the world by length of high capacity roads, second only to the US (GDP 15 times and population 8 times larger) and China (GDP 5 times and population 30 times larger) [10]. All these infrastructures were largely financed by EU Programs (Cohesion, Structural, Regional Development and the like) but today account for a heavy financial burden just in maintenance.

This incoherent EU policy is a reflection of its own nature, its original lack of definition between being a social and political project for the citizens and peoples of Europe, or just a Common Market. The hegemony acquired in the last two decades by neoliberal positions has bent this vagueness toward the commercial side. Let's emphasise that in what is referred to as urban



transportation strategy the EU has been inconsistent, that their pro non-motorized model statements do not match their large investments in infrastructures.

### 2.3 Endogenous factors

Apart from external influences, it is necessary to analyse the internal social developments behind the rise of the bicycle as an alternative to mass transportation. This requires us to refer to a peculiarity of Spanish society: the strength of “Neighbourhood Associations” (*Asociaciones de Vecinos*, hereinafter AAVV) in the period of the so-called transition (from the consumption of the dictatorship, which we can mark with the municipal elections of 1979 until the end of the Socialist Party (PSOE) administration, from 1982 to 1996, when the democratic regime can be considered as firmly established). Given that during Franco’s dictatorship political parties were banned (it was a one-party regime, the National Movement) opposition resorted to organize through other types of cultural, sporting or social associations, and amongst them played a key role the neighbourhood associations. These entities were heavily penetrated by the clandestine Communist Party, who used them to channel the social and neighbourhood claims, a suitable field for political contestation, as living conditions in cities, especially in the periphery and in the workers districts, were painful. It is therefore not surprising that the AAVV took up a cause on the issue of urban mobility, with all its lurid ballast of accident rates, discomfort and deterioration of the urban environment. But when democracy finally seemed to be fully established neighbourhood associations entered into a process of decay, when political parties could openly assume many activities they had once been forced to pass on to AAVV. However at the beginning of XXI century a certain social *delegitimization* of political parties, hosted by the numerous cases of corruption, has allowed AAVV to reborn from its ashes, to resume their historic goals, including the priority of improving public space urban and mobility.

Along with the AAVV the second agent of change in the model of urban mobility have been environmental groups, and more specifically pro cycling associations, closely linked to the former. López [11] has analysed and described the origins of citizen’s pro cycling movements, the misunderstanding they faced in the early nineties, the rejection of their proposals by the Administration, a scenario that is almost unbelievable nowadays. Both neighbourhood associations and environmental pro-bike groups agree to blame motorized traffic as one of the main elements of deterioration of cities, but while neighbourhood associations seek to improve the quality of life of citizens as its main target, and its thinking was initially quite local, with few references to the deterioration of the planet, environmental groups made their criticisms and proposals from a global scope, assuming the hypothesis that the dominant model of production was unviable, and that the worsening of the urban space was just a consequence of the former. In few years, however, the convergence between the two groups has strengthened, and today neighbourhood associations have incorporated wide environmental thinking as part of their claims.

For the majority of Spanish social movements, no matter if they are environmental, social, or cultural, political or whatever, limitless motorized

mobility which has taken over the cities during the second half of the twentieth century is the main culprit for the deterioration of urban life. It is not surprising therefore that the fight against the car and in favour of non-motorized means of transport has become a central goal.

### **3 A paradigm shift**

Our thesis is that as a result of the above factors, the attitude of the Administration of Valencia is evolving to question the unchallenged hegemony of motorized mobility. An evolution that it's currently at an early stage and with a long road ahead to consolidate. Let's keep in mind that until very recently (May 28<sup>th</sup>, 2010) the municipal government still maintained a negative position on the bicycle boom, approving municipal traffic ordinances [12] that can only be described as anti-bike, based on the number of violations and heavy fines contemplated for bicycle users. But despite his wavering and contradictory actions, the paradigm shift is perceptible, the increased use of bicycle evident, and the mutation of the municipal attitude perceptible.

### **4 Case study: City of Valencia**

The City of Valencia, capital of the autonomous region, presents optimal conditions for the implementation of the bicycle as a mean of mass transportation. It has a population of 786,424 inhabitants (2014 Census), an almost flat territory, with a mild climate, typically Mediterranean, an average temperature above 17°C, and although summers can be hot, winters are very moderate (temperatures rarely drop below 10°C), discrete rainfall, with a dry season in summer, and two maxima, one in fall and one in late winter and early spring.

Considering that in short urban distances (under 5 km, but the figure increases with traffic congestion) the bicycle is faster than the car, that about 45% of the urban journeys in the Spanish State are shorter than 3 kilometres [13], and that within 3 km from the city centre, live more than 90% of its population, being the maximum distance from the same centre to the coast 4.5 km (which eliminates much of the problems of intermodality), the assertion that Valencia has got unbeatable conditions for implementation of the bicycle as mass transport, and even hegemonic, cannot be branded as exaggerated.

The rise of cycling in the city of Valencia in the last two decades is remarkable. According to information provided by the Urban Mobility Plan Sustainability of Valencia 2013 (hereinafter PMUS) [14], in two years, from 2010 to 2012, grew by 53%, meanwhile, as a result of the crisis economic, all other modes of transport suffered a decline in the number of journeys, a situation the data offered by Girón Marín [15] fully confirms.

To be able explain this boom to the general, political and social factors above mentioned we should be add, in the case of Valencia, three specific local

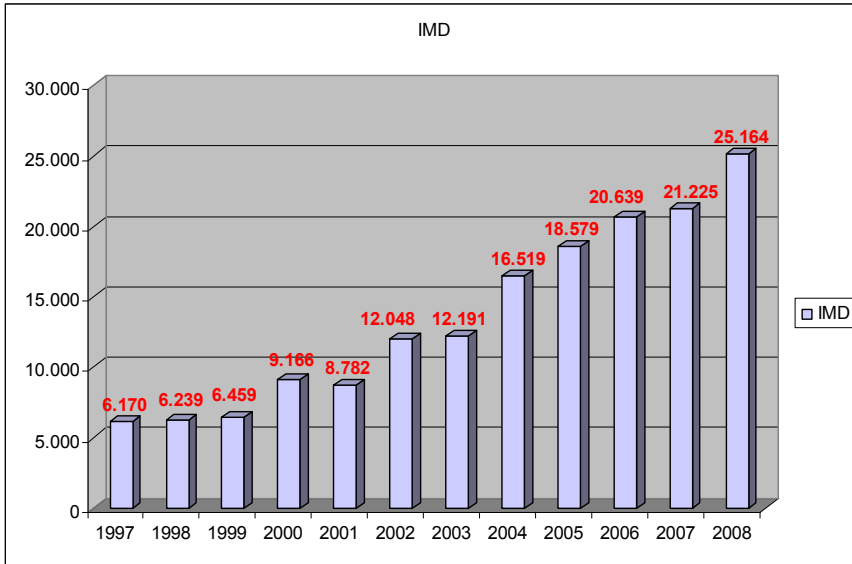


Figure 1: Evolution of the average daily traffic of cycleway 1997–2009.

reasons: i) the construction of an extensive network of bicycle lanes; ii) the implementation of a public bicycle rental system; and iii) the change in attitude and policies of the municipal Administration.

#### 4.1 Bicycle lanes and paths

The construction of a web of bicycles lanes and paths is perhaps the most revealing aspect of the change in mentality. The municipal government in the hands of right wing parties since 1991 has evolved from voting against the construction of bike lanes, when in 1986 he was in opposition [16], to be its toughest advocate. Despite this early refusal, accompanied by a bitter media campaign, Valencia was the first Spanish city where a bike path was built [17], but afterwards the implementation was slowed down, and what is worse, undertaken in a fragmentary and discontinuous way, with serious design flaws. The data speak by itself: from 1986-1995 only 13.8 kilometres of cycle paths were constructed, but between then and 2013 the network was extended to reach 123 km of bidirectional bike lanes, 31 kilometres of adapted streets for bicycles (*ciclo calles*) and 4.1 kilometres of compatible pedestrian bikes streets, a remarkable increase has clearly contributed to the rise of cycling [18].

Nevertheless the big boost to cycling infrastructure happened in 2008 with the approval of the E Plan (of the State government) and the “Trust” Plan (of the Autonomous Administration). Every cloud has a silver lining, or perhaps it was just a coincidence, the fact is that to try to alleviate the brutal rise in unemployment that sprang up as a result of the real estate crisis that began in the Spanish State in 2007, the central government, then in the hands of the PSOE,

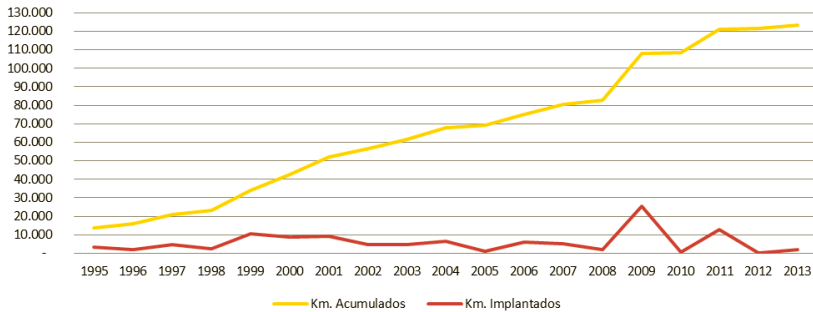


Figure 2: Growth of the network of bike lanes in Valencia.

with Rodriguez Zapatero as President, approved in November 2008, the E Plan, officially *Plan to Stimulate the Economy and Employment*. The plan, drawn from a Keynesian conception of stimulating the economy, meant the provision of a total of 12,836 million of euros to be transferred from the State government to the municipalities to be used in the construction of public works. We cannot analyse this measure now and here, improvised, with poor coordination, but we must emphasize a positive aspect, that much of this investment went to the construction of bike lanes. The plan, from an economic point of view was a mistake, a waste of public funds, but it contributed to the expansion of the network of bike lanes in many cities, including Valencia.

We cannot close the analysis of the implementation of the bike lanes network without indicating that the issue is controversial, in fact pro-bike groups have modify their claims, from demanding it everywhere to ask for a more restrictive implementation. The pro-cycling groups were (and in part still are) in favour of its construction, but within the pro-bike associations very radical views have emerged against bike-lanes. The debate is open. So while the “Valencia en bici” association in its Decalogue (2005) required “*Building bike lanes on all streets of Valencia in eight years, 25% each biennium*” [19], anti-bike paths groups say the bike, which they consider just one more vehicle, should share the road with the others. Obviously the bike is not just one more vehicle, since it is extremely vulnerable to motorized automobiles, and bike lanes are a way to protect them, especially in those streets where traffic intensity or speed are high. But if effective traffic calming measures, such as City 30 type, are achieved and implemented in reality, not in official statements, the bicycle should be able to share the streets with other vehicles. In any case, after thirty years of popular claims, the City of Valencia begins to have a minimum network of cycle paths, with notable design errors (the main one, its construction by occupying space at the expense of pedestrians without reducing the lanes for motorized traffic), but it must be stated that those projected in the last two years have significantly improved and are contributing without any doubt to the rise of cycling as transportation.

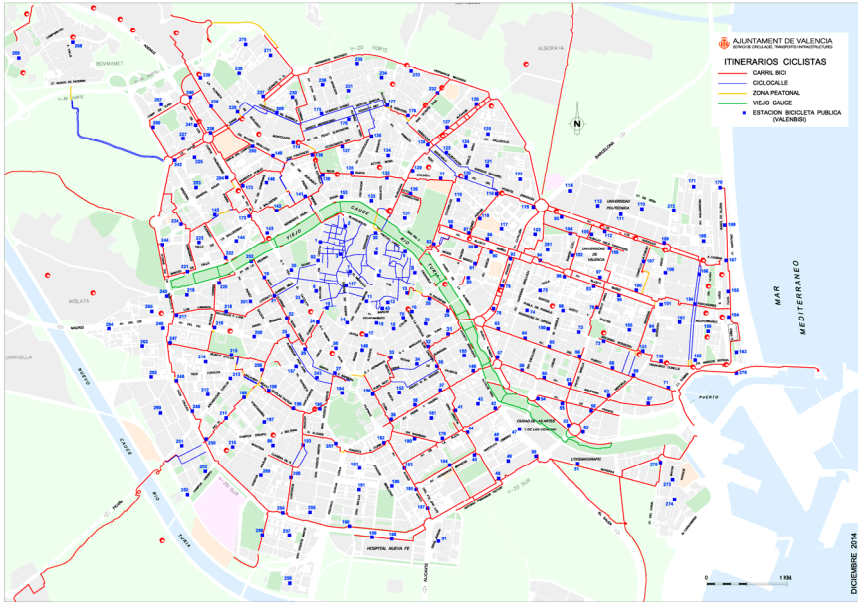


Figure 3: Bicycles lanes and paths Valencia, December 2014.

#### 4.2 Public rental bicycle system

The system of public bicycles for rent, managed by the company Decaux, copies the model used in many other European cities, which pioneered Vienna in 2002. In Valencia opened on June 21<sup>st</sup>, 2010, in the first phase with 50 stations, 500

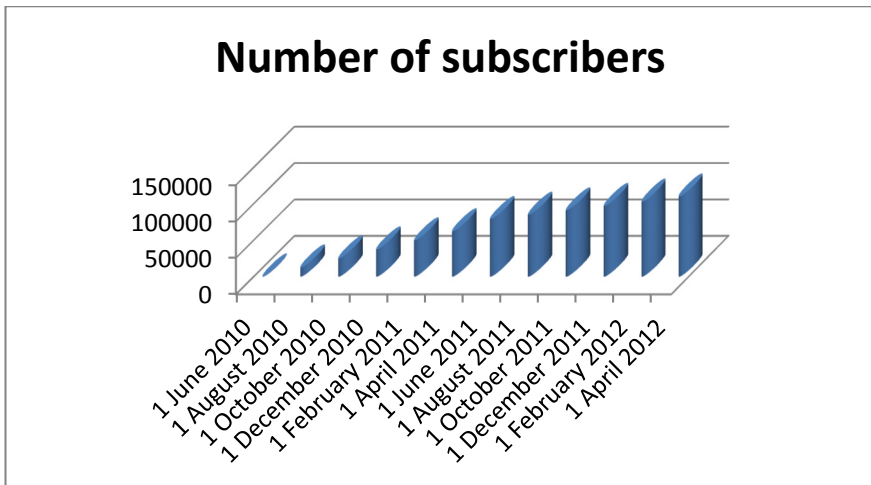


Figure 4: Subscribers to the municipal bike rental system.



bikes, with 242 subscribers [20], but in only 16 months (November 2011) the number of subscribers exceeded 100,000, peaked in 2012 with 112,000 [21]. An explosive growth that not even the promoters expected, and that clearly reveals the citizen's commitment to cycling as a means of transportation. No other Spanish city has reached such proportions; nearly 1 in 8 residents enrolled in this system here named *Valenbisi*. However, it must be mentioned that the system was overwhelmed, nearly collapsed since only 2750 bicycles and 275 stations were offered, and therefore since 2012 the number of users has declined.

### 4.3 The municipal administration

The third factor of change at the municipal level to be pointed out is the repositioning of the local government in relation to bicycle mobility. We must highlight an initiative: the approval on December 27<sup>th</sup>, 2013 of the Sustainable Urban Mobility Plan, which we have already mentioned. The analysis and critique of this document would require an extension that it is not available here, but we should not overlook the fact that the PMUS agrees in most the claims and approaches of environmental and pro-bike groups, although these same groups question their lack of effectiveness and real measures to implement them. Despite this not all groups greeted favourably the PMUS, some as "Valencia en Bici-AE Agró" were very critical of the document [22]. Rhetorical, social makeup or a plan with a real will to change things? Only time will tell.

## 5 Conclusion

The evidence is clear: the use of the bicycle shows a growth tendency unthinkable a few years ago. The local government is not daring to openly back this change of model and it seems that it is merely responding, late and partially, to the citizen's demand. To explain this undeniable increase three factors have been crucial: i) the social pressure from pro bike groups; ii) the construction of bike lanes; and iii) the implementation of a public bicycle rental system. Much remains to be done, but the shift towards a model of urban non-motorized mobility, should continue, taking the unexpected opportunity of the economic crisis and the general decline of motorized traffic.

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